BUSINESS BUDGETING
AND
BUDGETARY CONTROL

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FOREWORD

BUDGETING in industry is essentially a post-war development. Its growth, even in overseas countries, is largely confined to the past decade. Here, in Australia, its adoption is only now becoming evident. There have, of course, been isolated instances of budgeting and the use of budgetary control in the past, but these have been, in the main, limited to Australian branches of overseas organisations.

Unlike Cost Accounting the literature on budgeting and budgetary control is comparatively small, possibly owing to its recent adoption and late development. Indeed there have been few attempts, even in overseas countries, to collate the experiences of the past ten years, and to enumerate therefrom principles which can be used to guide those who are becoming increasingly aware of its importance. The notable exception in this regard is to be found in the Bulletins of the National Association of Cost Accountants of U.S.A. whose members bear striking testimony to the potentialities of this, the latest tool in managerial control. As far as the writer is aware this is the first attempt to set forth the theory and practice of budgetary control in a manner suitable for use under Australian conditions.

In addition to a description of fixed budgeting, including a discussion of the various budgets necessary for the prosecution of budgetary control, opportunity has been taken of including a description of variable budgeting together with, as a necessary corollary, an examination of the principles of profit control. The writer is not aware of any publication even overseas which has endeavoured to set forth the principles of fixed budgeting, then proceeding by logical advance to the more intricate and more effective variable budgeting and profit control. Inseparable from these studies is included the full interpretation of the fixed and variable elements in expense. It is felt that its treatment will enable all types of organisations to arrive at an understanding of principles involved and to commence budgeting in a manner most suitable to their particular needs. One chapter on the psychological aspects of budgeting has been included and the book is completed with a study of purely Australian conditions.

That budgetary control has come to stay cannot be doubted.

The experience overseas offers ample proof that the budget is now being recognised as an essential management aid. The National Industrial Conference Board of U.S.A. in its report on budgetary control in manufacturing industry in U.S.A. as long ago as 1931, commenting upon the fact that of 294 organisations circularised regarding their experiences of budgetary control stated that only four reported against it. "In respect to companies that have not yet started to budget," it said, "consideration of the benefits to be obtained from the installation of a budget would seem to suggest that a start be made without further delay."

The consensus of opinion amongst those who count in American and British industry is unanimously favourable and in most cases, enthusiastic, and the remarkable results achieved overseas are within the reach of those Australian organisations which are prepared to examine the principles of budgeting and to use budgetary control as an aid to management.

Business men everywhere are desiring to know more and more of this subject. They are recognising that it is sponsored by the leaders of industry; that the claims made for it are unequivocal and indispensable; that its adoption confers benefits which in these days of fierce competition the business man cannot afford to ignore. From the many remarkable testimonies let me quote one by Mr. S. W. Shibley, Vice President of the Bankers Trust Co., New York, and the author of "The New Way to Net Profits," who, speaking of budgetary control said:

There is a secret gold mine in Budgetary Control which a select few have discovered and are mining profitably.

A budget is not only a money maker, but the greatest money saver ever discovered.

I like to tell what Budgetary Control has accomplished under my observation.

I have seen the stock of one corporation reduced from 170 million dollars to less than 90 million dollars, and a larger business done on the smaller stock.

I have seen stock turnover in several large corporations not only doubled but quadrupled. I have seen a stock turnover of four times a year increased in a single year to thirteen times.

I have seen a corporation so hopelessly involved in 1921 that its bankers dared not let it go into bankruptcy, pull out under a new management and Budgetary Control so that it paid all its debts in 1925, and earned better than 10 per cent on its common stock.

I have seen a company so heavily indebted to the banks that its stockholders threw up their hands, requested the banks to secure new management and attempt to save a portion of their equity, transformed into a most successful operating company in less than two years, by efficient management and Budgetary Control, with money on hand at the present moment to retire all its banking indebtedness.

I have seen a corporation which lost $29,000,000 in three years prior to 1924, transformed into a successful corporation earning in 1925 about $2,000,000, simply by the injection of a new president and Budgetary Control.

The banker is bound to respect and esteem the Budgetary System. He

feels altogether more confidence in a customer who knows all the time where he stands and where he is going than in one who moves forward without plan or forecast, simply doing the best he knows how.

Nor is this experience confined to America. In an article "What British Business expects of Budgetary Control," Mr Robert Ashworth, Controller of Electric and Musical Industries, Ltd, England said:

The general experience of the many well-managed concerns in Great Britain which are employing budgetary control is that:

1. It provides an effective means of controlling all activities, including those of executives, and at the same time is sufficiently flexible not to hamper business.
2. It gives directors a useful basis upon which to build their policy.
3. It forms a useful means of communicating company policy.
4. It directs attention to the full economic use of the capital employed in the business.
5. It fosters co-ordination of the efforts of the whole organisation.
6. It breeds co-operation.
7. It saves loss through wastage and leakage.

Nor can the accountant be blind to its advance, because, like all else in business, results are finally interpreted in accounting terms and upon the accountant will fall, in the majority of cases, the duty of directing the initial installation of budgetary procedure. Recognition of this fact can be seen in the tendency to include budgetary control as part of the curriculum at least of post-graduate accountancy courses. It is confidently anticipated that a knowledge of budgeting will shortly be necessary in order that the accountant may adequately measure up to that larger sphere of accounting service, the scope and pattern of which is only now beginning to take shape.

Even apart from this factor there is a clarion call to the accountancy profession in view of the intense interest being manifested by bankers everywhere in business budgets. A special subcommittee of the Belgian National Committee for Scientific Management reported at the International Congress in 1932 in favour of the granting of bank credit being made conditional on budgetary control, and to this end drew up a plan for the gradual extension of budgetary control methods throughout Belgium.

In the foregoing therefore lies my excuse for attempting to place before business men and accountants the principles of this newest development in managerial control. Its purpose is to explain the principles of, and to create a desire for, budgetary control and it is my earnest wish that this book will worthily accomplish these aims, for the text is based not upon abstract theory but upon practical application and is the result of actual experience.

WALTER SCOTT

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PART 1
FIXED BUDGETS AND CONTROL

BUSINESS BUDGETING AND BUDGETARY CONTROL

CHAPTER I

THE PRINCIPLES OF BUDGETING

Budgeting and Budgetary Control defined—the development of budgeting—steps in the growth of the budget—the development of flexibility—types of budgets—purposes of the budget plan—limiting factors—relationship to accountancy—and to cost accountancy—essentials of effective budgeting—the budget committee—the budget officer—the budget period—commencing factors—the initial budgetary programme—reviewing the budget—budget manual—the master budget—approval.

Budgeting and Budgetary Control Defined.

In simple terms, a budget can be described as an estimate of future needs, calculated for a definite period. When used in connection with budgetary control in business however, it is a planned forecast of anticipated business operations and results covering a definite period and expressed in accounting terms. Budgetary Control may be interpreted as the use of this forecast as an instrument for the guidance of business operations. Not only are estimates involved, but also a plan whereby the operations of all departments are logically related to each other and are co-ordinated to make possible a formulated programme which acts as the basis for the control of part or the whole of the business during the budgetary period.

There are three simple steps in the preparation of the Budget—

1. Estimates covering the budgetary period are decided upon for each department of the business.
2. These figures are co-ordinated to provide a complete and total estimate for the whole business.

3. Data and reports are prepared during the period, for the purpose of comparing the estimated figures with the actual results obtained, and for the formulation of controlling plans for the future where these are necessitated by results.

The Development of Budgeting.

The term "Budgeting" is and has been for many years quite a familiar one in many countries in its application to Government financial policy. Indeed, the definition often found in dictionaries is "a sack," and the word is derived from the French "bougette," a "bag or pouch," the term apparently being coined because the Chancellor of the Exchequer of the English Cabinet used to appear before Parliament with his papers in a bag or sack. As far as business is concerned, however, the budget is a comparatively recent development, and its birth was largely due to the imperative necessity for readjustment demanded by post war conditions. It must not be inferred that no business budgets were to be found before the war, but the pioneers were few and consisted for the most part of larger companies in U.S.A., and, to a lesser degree, in England.

That there was merit in the idea was proved firstly by the fact that budgeting was persevered with, and secondly by the number of additional companies which adopted the procedure year by year. The results in the early years, and even up till 1926, were somewhat conflicting and often hazy. Some declared it to be a heaven-sent device for the solution of industrial ills, whilst others decided that its benefits were illusory, the ideals being shattered by actual results. The major portion of industry, however, adopted a non-committal attitude of awaiting further information and more definite results.

The world depression of 1929 brought with it business troubles and worries which were somewhat new in feature. Immediately there came the necessity for husbanding every resource and taking advantage of every possible plan which promised any sort of aid—and the subject of Budgetary Control received more urgent and more universal consideration. Questions were asked everywhere regarding the results it had achieved and the experience of those companies which had already included it in their business policy. In U.S.A. the demand for exact information became almost nation wide and in the year 1930 the National Industrial Conference Board conducted an inquiry to collect full information regarding the budgetary control movement and to seek to estimate the results and successes that had been achieved. Almost simultaneously (July 1930) the attention of the International Management

Institute was focussed on the subject at Geneva in an effort to arrive at the same information. This latter body defined Budgetary Control in the following terms—

"It is a method of rationalisation," they said, "whereby

Budgetary Control.

Estimates covering different periods of time are, by the study of statistical records and analytical research of all kinds, established for all and everything affecting the life of a business concern which it is possible to express in figures. These established standards are constantly revised and checked for the periods determined in the light of actual achievement; with the double purpose of correcting the estimates and of initiating the investigation and correction of causes of discrepancies."

The results of both inquiries were eminently favourable and really gave the subject its charter. Since then its adoption and development in U.S.A. and Europe have been little less than phenomenal. Yet the reason is not hard to find, for in any analysis of a business there are three fundamental factors—

1. What is the present position? See the Balance Sheet.
2. How did it arrive at such a position? See the Profit & Loss Account.
3. Where is it heading for in the future? See the Budget.

The Budget can therefore be regarded as the logical successor to the other two statements.

Steps in the Growth of the Budget.

Three steps can be traced in the development of budgeting—

1. *Planning.*

   The first stage was the idea of planning the various operations of the business. Very often these plans did not get further than the mind of the proprietor. They were sometimes the outcome of personal knowledge of each phase of the business, or, on more rare occasions, the result of an analysis of figures. Generally speaking, however, the ideas were kept only in the mind.

2. *Writing.*

   The second step took the form of an expression of these business plans in writing.

3. *Co-ordination and Co-operation.*

Gradually a combining influence was incorporated so that a number of small individual plans were joined together. Every aspect of the business was examined and fitted into its place in the general business policy. Then co-operation between the executives and the employees was sought, so as to make the budget plan a joint responsibility and give it a maximum chance of success.

The Development of Budget Flexibility.

Even over the past five or six years, much progress has been made in the development of budgeting. At first it was restrictive in character and the prevailing idea seemed to be that only under very exceptional circumstances should budgetary plans be altered. It was felt that too much interference with the planned figures would provoke a state of affairs wherein effort to reach the budgeted estimates would be lessened because the budget could be made to conform to whatever results were actually achieved. It was not long, however, before the fallacy of this attitude was seen, and some degree of flexibility is now regarded as a valuable attribute. It should be readily adaptable or capable of alteration to meet any conditions which may arise and it should be possible to treat it as a means of control and guidance for the effective operation of the business. It is essentially a tool of management, and the newer idea is best expressed in the quotation, "Manage through your budget; don't let it manage you."

When conditions arise which necessitate changes in the original forecast it is essential that alterations be made to take into account these newer factors. Perhaps the budget was improperly set in the first place, or new circumstances have arisen which make it quite impossible of attainment. Alternatively, it may be extremely easy to realise the anticipated figures and therefore no real task has been set. It would then be possible for the various departmental executives to exert little or no effort towards efficiency and to become largely disinterested. Treatment of the budget as being rigid and unalterable should therefore be avoided, though amendment should be made only when conditions make such a course advisable.

Consideration will later be given to the preparation of Flexible Budgets, which are finding increasing favour because they take variable factors much more into account.

Types of Budgets.

It has already been mentioned that the budget is a tool of management—a device for executive control. The complexities of modern business impose heavy demands upon executive time, and one of the primary purposes of the budget is to organise, stimulate and control the activities of the business so as to facilitate management and guidance. Where all functions have been predetermined and have received the stamp of approval of the executive, the factors requiring the consideration and perhaps action of management are those which show differences from the original estimates.

It is usual to speak of "a budget" and this may seem to indicate a single complete unit. In one sense this is correct, as it represents a single co-ordinated plan, but it is really a combination of units, with separate major budgets for sales, production, expense and finance, together with such subdivisions of these as may be considered necessary. The following is a list of budgets which are often found in a manufacturing business—

Sales.

1. Sales Budget.
2. Marketing Expense Budget—
   (a) Advertising Budget
   (b) Selling Expense Budget
   (c) Transportation and Delivery Expense Budget.

Production.

1. Production Budget.
2. Materials Budget.
3. Purchase Budget.
4. Manufacturing Expense Budget.
5. Labour Budget.
6. Plant and Equipment Budget.
7. Repairs and Maintenance Budget.

Administration.

1. General and Administrative Expense Budget.
2. Financial Budget.
3. Master Budget.

In addition there would be the Estimated Profit and Loss A/c, and Estimated Balance Sheet.

Purposes of the Budget Plan.

Each budget is prepared for the purpose of being incorporated in the general budgetary plan which is to be used to

guide the operations of the business. There are a number of aims and advantages which can be stated thus—

1. *As a General Administrative Policy Guide.*
   (a) To promote a thorough understanding amongst the executives of the hopes and desires of the business in general and their own department in particular, so as to obtain the co-ordinated intelligence of the whole organisation behind a predetermined plan.
   (b) To act as a basis for administrative control, by giving up-to-date information regarding progress made, as measured by a predetermined standard, and by making such progress a test of executive judgment.
   (c) To co-ordinate the plans of the various departments with a view to obtaining the utmost efficiency, by the control and reduction of expenses and therefore costs.
   (d) To make possible decisions as to the relative ability of the various officials and to fix responsibility for failures.
   (e) To forestall rather than to correct losses, by means of a dynamic, rather than an historical, control.
2. *As a Sales Guide.*
   (a) To provide accurate forecasts of customer demand and the general trend of such, using the forecasting as a basis for the adoption of a co-ordinating production policy and merchandising campaign.
   (b) To control sales, selling activity and selling expense, and to compare actual results with budgeted tasks.
3. *As a Production Guide.*
   (a) To provide a manufacturing programme which will ensure a continuous flow of merchandise in the most economical manner, yet with the utmost efficiency, so as to allow the sales plan to be carried out and yet keep stocks at the lowest figures.
   (b) To spread the manufacturing operations as evenly as possible over the year, as a means of obtaining the benefits resulting from an even production plan and possibly simplifying labour and financial problems.
   (c) To minimise obsolescence and mark-downs.

(d) To standardise production, equipment and processes wherever possible.

(e) To enable plant facilities and capital to be kept employed more nearly at maximum capacity, and to prepare for any further installations, so that these can be arranged for at the most propitious time.

4. *As a Financial Guide.*

(a) To estimate and control the amount of working capital required to finance the usual operations of the business, and to give notice of and to enable the necessary arrangements to be made for the supply of any special accommodation which may become necessary as a result of some special features in the selling or production policies.

(b) To provide standards for collections and disbursements.

(c) To preserve the assets of the business in a healthy ratio condition.

These various matters will be explained and amplified in later chapters.

Limiting Factors.

Any business endeavouring to reach a certain objective will find its task lightened if it is fortified by a well planned budget. Nevertheless, (or possibly because of this) some note must also be taken of the limiting factors.

1. Any plan for the predetermination of results depends very largely upon the accuracy of the forecasts made, and inaccurate estimates will mean an inaccurate and sometimes useless budget.
2. Experience has shown that, while certain advantages from budgetary installations accrue almost immediately, it often takes a considerable period to reach a really high standard of accuracy in forecasting future results. This largely depends upon the type of business which is the subject of the budget, and the reliability and adequacy of the available statistics covering past operations.
3. The budget cannot specifically take into account special happenings which could not be foreseen at the time of its preparation.
4. The budget cannot take the place of management, but should be used as an aid to executive control.

The first three factors are largely being overcome through the use of the Flexible Budget.

Relationship of Budgeting to Accountancy.

Budgeting has been termed the most advanced form of accounting, and has also been defined as accounting in terms of the future, but such definitions are misleading. Budgeting cannot be included within the general conception of accounting and its functions. It is true that there is at least some kind of relationship, but this is no more than that existing between other sections of the business. Accounting, generally speaking, deals with actual figures and actual expenditure, while a budget involves the use of estimated figures for future operations, and endeavours to co-ordinate phases of a given group of expenses and activities into a well balanced unit. Thus, each logical subdivision of the departmental activities of a business is allotted some share of work, and is asked to carry out such work at a predetermined rate of expense. These features are outside the scope of accounting, which is concerned with the recording of results in financial terms. The budget is not a tool of accountancy and should never be regarded as such. It is essentially an aid to management. It does, however, take note of accounting classifications and interprets its results in accounting terms.

Relationship of Budgeting and Cost Accounting.

Budgeting uses to a very large extent the results of the past as set forth in cost accounting, and accurate costs become a valuable aid in the compilation of the budget. If this use of past results was the only factor involved, the relationship between cost accounting and budgeting would be no more definite than in the case of general accounting and budgeting. Standard cost accounting and budgeting, however, both use predetermined results as a basis and these are arrived at by the operation of standards. It is this factor which has given rise to the oft repeated statement that budgeted costs and standard costs are identical. If this were true, it would seem to indicate that budgeting is simply standard costs somewhat disguised and given a new name. It is remarkable how often this aspect of the matter is brought forward, seemingly originating from claims made right from the first by the pioneers of standard costs. Frequently in treatises on costing, the expression "standard costs" was referred to with the expression "budgeted costs" as an alternative rendering. The confusion that exists in relation to this matter is possibly more one of terminology than of concept, as the very term "standard costs" to-day has more than one meaning and generally requires amplification.

In any case, it is necessary to note that there is an essential difference between standard costs and a budget. Standard costs do not make a budget. Numerous companies have standard cost systems without budgeting. On the other hand, there are many concerns which have adopted budgetary procedure while having no standard costing system. Furthermore, it is well known that there are some types of businesses to which the application of standard costing systems is quite unsuitable, and sometimes well-nigh impossible, yet in which budgeting can be profitably employed. Applying the definition of budgetary control to standard costs, it will be found that the latter conforms with it only to the extent that it affords a basis for currently measuring certain operations. They do not, however, forecast trends, constitute a programme, or co-ordinate the various activities of a business to provide a vital policy. Standard cost methods, it is true, bear a very close resemblance to budgetary methods, but alone they do not constitute a budget.

In the case of Flexible Budgets, standard costs can be a most helpful factor in the compilation of the somewhat complicated figures necessary. Where such a costing system has been in operation and it is possible to use the figures thus already prepared, a greater degree of accuracy is made possible and the work of completing the budget is minimised. Here again, however, there should be no confusion of the terms. Standard costs are used in the preparation of budgets, but the reverse would seldom be true.

Essentials of Effective Budgeting.

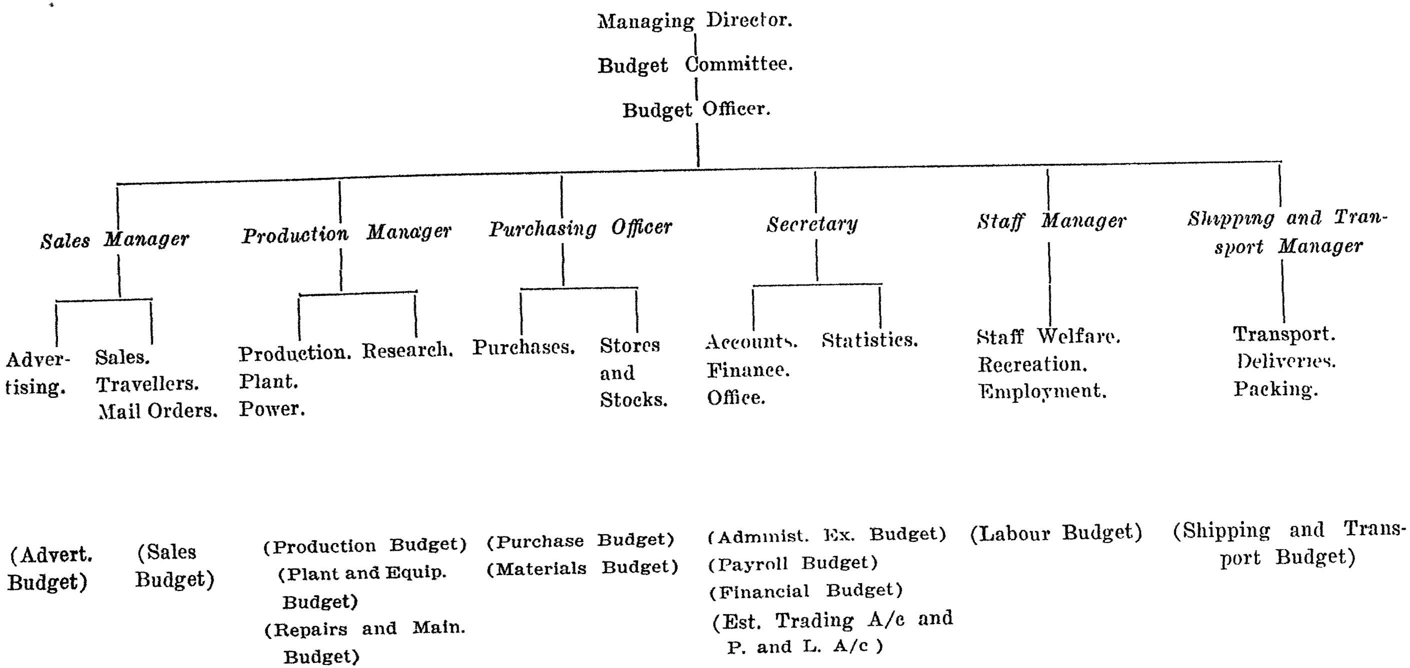
1. *A Clearly Defined Organisation.*

In order to carry out budgeting in a manner which will provide maximum benefits, organisation within the business is essential. It is necessary to make use of the whole organisation and, generally, the more complete the organisation, the more success is likely to attend the efforts towards budgetary installation. There should be a sound plan, with responsibilities well defined and adequately maintained. (See Fig. No. 1.) Furthermore, the records should be clear, consistently departmentalised, and established in such a manner as will indicate definite responsibility on each unit or section of the business. These are necessary so that the business budget itself may become a forecast of future accounts in terms of organisation responsibility. In certain types of budgets this division of organisation responsibility is the most essential factor of the plan. Always it is a most important matter.

Certain responsible officials must therefore be given the power to carry out the arranged policies, to administer the

FIGURE No. 1.

BUDGETARY ORGANISATION PLAN.



budgets which have been framed after taking these policies into account, and to exercise control over the results, authorising corrective measures where necessary. All too frequently in business it is found that policies, reports, statements and tables, involving time and money in their compilation, are prepared for the betterment of the business, only to be disregarded by those officials whose duty it should be to make a thorough examination of the contents. No figures should be compiled for the sake of compiling them; no policies should be formulated for the mere purpose of formulating, and this is nowhere truer than in the case of the budget. The first step is preparation and the second administration. With this latter should go the power to employ corrective measures. Practically any budget is almost useless if no attempt is made to put it into operation.

2. *An Accurate Accounting System.*

The system of accounting in the business must be such as to hold each part of the organisation to its responsibilities. The budget will tend to develop co-ordinated action and wherever this is broken down or interfered with, the responsible factor should be discovered. The accounting system should make it possible to establish such responsibility beyond doubt.

3. *A Clearly Defined Policy.*

Accurate forecasts are impossible, or almost so, without a knowledge of the business policy to be adopted during the ensuing period. The directors of a business may decide, for example, that the turnover must be considerably increased, and they may therefore be prepared to spend a greatly increased amount on marketing expense, to bring out new cheaply priced products, or to cut prices on existing products. Without a due knowledge of these matters the probability would be that in the preparation of a sales budget for the next period, the efforts at predetermination would take into account the general possibilities based upon internal factors similar to those in the current period. Not only would this mean working in the dark in relation to the estimates for the coming year (which would consequently probably be wide of the mark), but the standards set down for controlling the operations as they later actually occurred, would be almost valueless. To estimate figures without a knowledge of policy would largely destroy their value and increase the chance of inaccuracy.

4. *Preparation by the Responsible Executives.*

Subject to the natural control of the person or committee in charge of the budget, and finally to the chief executive, arrangements should be made, wherever possible, to enable

those responsible for the performance of the budget to have some say in its preparation.

This is really a psychological matter, and the tendency of modern business is to take increasing notice of such. The final results are much more likely to be satisfactory where those responsible for carrying out the programme have had some voice in its preparation, though it is true that certain difficulties may often have to be overcome. There may be, for example, a tendency to under-estimate in order to make the task easy, or to over-estimate to impress superiors. Apart from these matters, however, there is likely to be a much stronger incentive to complete a quota where the person carrying out the work has himself suggested the figure as being one capable of attainment.

5. *A Logical Sequence in Budgetary Preparation.*

It is essential that proper arrangements be made for the preparation, submission, examination and review of budget figures, in logical sequence. The work involved in the preparation of a budget naturally depends upon the complexity of the operations of the individual business. Budgetary preparation is often exacting and demands much careful thought and attention on the part of the whole of the members of the staff engaged in the compilation of the various figures. Once supporting budgets are completed, there follows the necessity for such co-ordination between them as will result in a balanced merchandising, production and financial policy. It may be found that a satisfactory selling and manufacturing programme would result in an unsatisfactory financial position, or in the provision of asset and liability ratios which would show a distinctly unhealthy tone. A complete review of practically the whole of the work already covered in the various budgets may then be essential. It must be the duty of a specific person or committee to arrange for the preparation of the various budgets and their collection so as to enable the Master Budget and finally the estimated Profit and Loss Statement and Balance Sheet to be prepared. This is generally covered by the appointment of a Budget Officer, or possibly a Budget Committee.

6. *A Degree of Flexibility.*

This is desirable to provide for both possible and unforeseen conditions. The exact degree will depend upon the basic idea of the particular budget in use and may range from semi-rigidity to extreme flexibility, though the tendency in budgeting is towards increasing the latter. In nearly all cases, control is increased and strengthened through the provision of an arrangement whereby differences are automatically catered for, as in Flexible Budgets, rather than an amendment to the budget plan as may be necessary with a Fixed Budget.

7. *Constant Comparison of Budgeted and Actual Figures.* Provision must be made for the comparison at frequent intervals of the budgeted and the actual results, and definite authority must be vested in a person or a committee for carrying out the decisions necessitated by discrepancies which become apparent.

Generally, the more frequent the comparisons, the better the control. Discrepancies often increase rapidly and frequent comparisons mean that unfavourable trends can be quickly stopped and a return made to standard conditions. In addition, where departures from the budget are the result of new conditions which have to be taken into account, the necessary arrangements can be put in hand more quickly. Some person must be appointed to have these alterations made. Often this is deemed to be sufficiently important to warrant the attention of a chief executive, but generally most matters could be dealt with by the budget committee, or a budget officer.

The Budget Committee.

The appointment of one person in charge of the budgetary arrangements is often found in the smaller business. In such cases provision is made for consulting the manager or managing director or some other executive on any special problems which may arise in connection with the preparation, administration or control. In larger organisations a budget committee is generally appointed. In a typical manufacturing company, such a committee would comprise the managing director or the manager (as chairman), the sales manager, the production (or factory) manager, the staff manager, the accountant (or possibly the cost accountant or the secretary), and one other person, who, as Budget Officer, would carry out the administrative work of the budget. Individual circumstances, of course, affect the composition of the committee, and it has often been found advisable to include other officials, such as the advertising manager, the chief engineer, the purchasing agent, the shipping or transportation manager, and one or two sectional factory superintendents. Indeed, in some countries where manufacturing activities have reached a high standard of efficiency, the tendency is towards including one or two foremen as direct representatives of the employees. That this has a sound basis cannot be denied, because in the vast majority of cases the ultimate success of all manufacturing estimates is largely in the hands of the various foremen and their workmen.

The committee thus appointed is able to decide in general terms what effect the policy of the Company (as decided upon by the Board of Directors or the Management, and as explained

by the Chairman of the Budget Committee) is expected to have upon the various operations during the budgetary period. Matters of general importance regarding the various budgets are decided upon and each departmental chief is able to arrive at a clear understanding of the position and is able to proceed with the preparation of the figures affecting his particular department. The effect of the various decisions arrived at in conference, and the transference between departments of data and information, is arranged by the Budget Officer.

The Budget Officer.

The duties of this official are as follow—

1. To arrange for all meetings of the Budget Committee.
2. To arrange the preliminary programme for the compilation of the various budgets.
3. To see that there is available any and all information likely to be essential or of help in budget preparation, and that such information is passed to the proper persons.
4. To prepare schedules showing when each of the estimates will be required, to collect the estimates on the due dates and to promote co-ordination between the departments.
5. To complete, or have completed, the Master Budget and the estimated Profit & Loss A/c and Balance Sheet. This work may be passed over to another officer where necessary, in which case the completed statements would be returned to the Budget Officer for submission to the Budget Committee.
6. To prepare any necessary summaries of the final results, forwarding such to the members of the Budget Committee, and to give any necessary help in the examination of the results shown.
7. To take note of and to make or arrange to have made, the necessary revisions which have been decided upon by the Budget Committee or the final reviewing executive and to transmit the various budgets back to the departmental executives where this is found to be necessary.
8. To arrange that summarised reports, showing the actual results achieved, be prepared and made available to each member of the Committee.
9. To obtain detailed explanations, where such are required, of any important variations between the estimated and the actual results.

10. To carry out the wishes of the Budgetary Committee in relation to any alteration or revision of policy that may be decided upon, and to give effect to any of the resolutions or wishes of the Committee.

The Budget Officer really acts as Secretary to the Budget Committee, which body is charged with the carrying out of the planned proposals, the decisions in relation to the alteration of the various figures where necessary, and the authorisation of any changes of policy or of work that may be necessitated by such conditions as may arise from unexpected causes. The question whether these matters could be left entirely in the hands of the Budget Officer, who could always approach the budget executive or committee for any authority not already vested in him, is something to be solved by each individual organisation, having in mind its own domestic state of affairs. It is most important to see that the question has been definitely settled, the responsibility located, and the person whose final duty it is to attend to such matters as may require alteration, is duly empowered to do so.

The Budget Period.

At the commencement of budgetary installation, the period to be covered is often a difficult matter to solve. Once having been solved, however, the difficulty seldom recurs, as if the period of time fixed upon has proved satisfactory, the second budget automatically adopts the same period. Even where some alteration becomes necessary, the decision in relation to the new period is prompted and guided by those factors which have, in themselves, warranted the change. Much care is necessary in arriving at the initial decision. No general rule can be followed, as each business has its own peculiarities to take into account.

The following factors, however, have generally to be considered—

1. *The Date and Duration of the Accounting Period.*

As budgetary preparation is carried out in accounting terms, from a statistical standpoint at least, there is an advantage in having the main budgetary period correspond with the financial period.

2. *The Degree of General Stability in the Industry.*

Stability in industry is one of the greatest aids towards accuracy in forecasting sales and planning production. Where conditions are uncertain it is wise to make the budget period as short as possible.

3. *The Length of Time required for Results to be Realised from Executive Alterations of Policy.*

It is desirable for the budget period to be sufficiently long to enable the results of policy alterations to be reflected. A budget taking into account such alterations and basing its estimates upon the effects of such, would be quite inaccurate if these were not felt until after the close of the period.

4. *The Influence of Seasonal Factors.*

Sometimes seasonal factors have such a direct bearing on business results that the budget periods are fixed having these in mind. The demand for seasonal products would be illustrative of this factor.

5. *The Business Risk and Its Type.*

Where there is a particular risk, the budget period is often fixed to cover the duration of the whole or the worst of the risk.

6. *The Schedule Period of Production.*

Occasionally the period of a complete production cycle is the basis adopted for the budget.

7. *The Method of Financing, Production and Stock Control.*

These, too, sometimes have an influence on the choice of the period, because such methods may be of assistance in the preparation of the budget figures.

8. *The Period Covering the Merchandising Stock Turnover.*

This relates, of course, more particularly to the retail stores, which generally arrange for two budget periods per year—one covering the spring and summer seasons, and the other autumn and winter. These are natural divisions marking the policy of the store, and lend themselves particularly to the preparation of the budget.

9. *The Adequacy and Nature of the Statistical Information.*

If past statistics have been compiled on a quarterly basis, it may be advantageous to continue with this period.

It is generally easier for a utility company to budget for a considerable period ahead than it is for a manufacturing company. The utility company, knowing that its progress over a period is likely to be steady, because of its degree of control over the market, can plan its normal development with accuracy and assurance. Thus the American Telephone and Telegraph Company is able to prepare a general forecast of its business twenty years ahead, and its policy is based on this long range

plan. This is, of course, an enviable position, growth being reasonably certain along steadily progressing lines.

The manufacturing company, however, is in a much more uncertain position. In addition to the general run of ordinary competition it is always possible that some violent competition may make drastic alterations of policy necessary, and in the case of many manufactured products, improved productive processes and new inventions may turn a desired article into an unwanted one. Furthermore, the price schedule of a manufacturer is, as a rule, designed to serve for one year only, or perhaps an even shorter period. A radio manufacturer, for example, may fix his prices for a particular year and the whole of his manufacturing and selling policies may be based upon that particular price. Subject to the foregoing factors, the budget should cover the longest period possible, consistent with the minimum business hazard.

Consideration of these matters will allow a decision to be made as to what budgetary period is to be adopted. Figures 2 and 3 show the budget periods adopted by a number of U.S.A. companies, the information being collected by the National Industrial Conference Board.

FIGURE No. 2.

Periods covered by certain budgets used by 162 Companies, which, in the survey, reported use of some kind of Budget.

Periods Budgeted.

Kind of Budget.	Mths 12	Mths. 6	Mths. 4	Mths 3	Mths. 2	Mths. 1	Not Specified.	Total.
Sales	99	11	1	15	1	3	11	141
Production ..	85	9	1	13	1	3	16	128
Manufacturing Expense	85	9	1	8	0	2	9	114
Marketing Expense ..	85	11	1	10	0	2	11	120
Administration Expense	85	7	1	8	0	2	11	114
Capital Outlay ..	62	6	1	5	1	1	8	84
Cash	42	5	2	3	0	6	8	66
Profit and Loss	61	5	1	6	0	2	3	78
Balance Sheet ..	30	2	1	1	0	1	2	37

Alternatives to the Single Period Budget.

With most manufacturing companies the tendency is towards adopting a twelve months' period, because usually the available statistical data is prepared over this period and the usual accounting arrangements cater for such. Though in many cases twelve months would be the best term, where the organisation is new to budgeting this period is often too long, and better

results would be obtained by the adoption of a three months' period. Several schemes have been evolved in endeavours to obtain the benefits of both long and short periods, without the attendant disabilities of either.

1. Budgets covering two terms—a long period and a short one—are prepared simultaneously. A general budget taking into account all the factors likely to affect the year's figures is prepared, and the aims of the business over the ensuing twelve months are incorporated in these figures. Then the whole of the operations for the first three months are set out in greater

FIGURE No. 3.

FREQUENCY OF BUDGET REPORTS.

Budgets for which figures are Periodically Reported of Actual Operation and Frequency of Reports.

Budgets	Frequency of Reports	No. of Coys.
All	Monthly	78
All	Monthly, except Sales, weekly ..	2
All	Monthly, except Sales and Production, weekly	2
All	Monthly, except Selling and Admin. Ex.	1
All	Some Monthly, some quarterly	2
All	Semi-Monthly	1
All	End of each eight periods ..	1
All	Quarterly	5
All	Not Specified	9
Man., Selling and Admin. Ex.	Monthly	1
Selling and Admin. Ex.	Monthly	1
Manftg. and Selling Ex.	Monthly	1
Manftg. Expense ..	Monthly	3
Manftg. Expense ..	Monthly, others quarterly	1
"Certain Ones"	Monthly	1
Manftg. and Admin. Ex.	Not Specified	1
		110

("National Industrial Conference Board, U.S.A.")

detail. The degree of accuracy for three months is likely to be greater than for the full twelve months, though sometimes compensating errors in the latter give a remarkably accurate final result. Before the first three months has expired, a budget covering the following three months is prepared, taking into account the immediate conditions and also the twelve months' figures, which are treated as a base.

2. A yearly budget is prepared as in the previous instance, and a shorter term budget, covering a period recommended by natural conditions, would also be compiled. Thus, in the case

of a company manufacturing summer and winter goods, a budget would be prepared for the full twelve months, supported by budgets, complete in themselves, set up to cover winter goods' trading and summer goods' trading.

3. Where special conditions recommend such a course, a budget is prepared for twelve months by combining the total of twelve one-monthly budgetary plans. In other words a budget is prepared for each month of the year and the total of these gives the yearly budget. Each month as it is completed is dropped from the total and a further month is added, so that there are always twelve one-monthly budgets available. In this way a complete year's forecast is also always available. This type is called a Moveable Period Budget, and an example with six months always showing will be found in Figure No. 4.

Commencing Factors.

Though commencement is generally made with the Sales Budget, there are also other points from which a start may be made. Consideration will later be given to the practice of some companies in commencing with the profit it is desired to make, the amount of sales necessary to make this profit then being decided upon, and production and other working and administrative costs estimated on this selling programme. Sometimes budgeting commences with production. This would more often be found in such enviable enterprises as are able, through monopolies, patents, favourable contracts or overwhelming demand, to sell the whole of the goods that can be produced. It is also met with where a plant is able to sell the whole of its output to one buyer. Thus, it is not uncommon to find in the timber industry that the total output of all kinds and grades of timber produced by a sawmill is purchased under contract. Under such conditions, whilst the first budget prepared would be the production budget, really the crux of the question is still the sales possibilities, because the amount of production is the same as the amount of the sales.

An inquiry by the National Industrial Conference Board (U.S.A.) in relation to the preparation of budgets showed that of eighty companies, forty-two commenced with the Sales Budget and twenty-three with Production, the latter including Manufacturing Expense. Only one commenced with Selling Expense, one other with Advertising and two with Administrative Expenses. There were, however, five other companies which commenced with Expense Budgets though there was no indication of just what they included. There were two companies which began with Financial Budgets and three others with Capital

Figure No. 4.

MOVEABLE PERIOD BUDGET.

Budgets.	Jan.	Feb.	Mar.	Apr.	May	June	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Six Monthly Total
1st Month	£8,000	8,100	8,400	8,500	8,300	8,100							49,400
2nd "		8,000	8,300	8,500	8,300	8,100	8,250						49,450
3rd "			8,200	8,400	8,300	8,100	8,250	8,400					49,650
4th "				8,500	8,400	8,100	8,250	8,400	8,700				50,350
5th "					8,500	8,200	8,400	8,500	8,700	9,000			51,300
6th "						8,200	8,400	8,500	8,700	9,000	9,300		52,100
7th "							8,500	8,600	8,700	9,000	9,300	9,500	53,600

Outlay, whilst only one commenced with an estimated Profit and Loss Account.

In some sections of industry, such as the manufacture of agricultural machinery and tractors, for example, the financial budget is frequently used as a commencing point. Sales are concentrated in certain months of the year and the filling of orders is confined to a still shorter period, all customers requiring delivery before their harvest, or before seeding. The following difficulties therefore arise—

1. Technical—the attempt at an equal distribution of production is complicated by the amount of available capital.
2. Financial—the receipts, mainly falling within the shorter period when orders are filled, vary greatly thoughout the year.

Broadly speaking, during eight months of the year expenditure exceeds receipts, while the remaining four months show excess of receipts over expenditure; therefore the financial difficulty makes it necessary to draw up a financial budget first.

The Initial Budgetary Programme.

As a general rule, once advice has been received in relation to the company's general policy and any matters which are likely to affect the coming year's transactions, the sales and selling expense budgets are prepared as the first step in the total budgetary plan. Once these have been completed, the various entries are broken up into products and lines so as to make possible estimates of the total factory cost of manufacturing the products that it has been estimated will be sold. Thus a production plan is arrived at, and expense in this connection is estimated. The effect of production and selling upon stocks is calculated so that materials and purchase budgets can be prepared. The necessity for a review of the plant and machinery must not be overlooked, as it would be unwise to risk interference with the production programme because the plant and equipment was not sufficient to allow such a programme to be carried out. When the estimates of expenses, together with the whole of the selling and productive factors have been completed, it becomes possible to prepare an estimated Profit and Loss A/c and Balance Sheet in the terms of the figures supplied. The results portrayed will show the desirability or otherwise of carrying out the plans tentatively put forward.

The following represents a common procedure in budgetary preparation—

1. A questionnaire covering trade conditions, competition, money and crop prospects is sent to each salesman.
2. From these and previous sales results a preliminary estimate of sales, advertising and production is prepared.
3. This is checked by the sales and factory executives, any alterations necessary being made, and a Sales Budget (including sales quotas) and a Production Schedule prepared.
4. Sales expenses are planned, including allowances to individual salesmen.
5. Advertising estimates are completed.
6. Purchasing schedules are prepared, also a Plant and Equipment Budget.
7. Office and Administration expenses are estimated.
8. A Profit and Loss Statement for the period is prepared.
9. A Financial Budget, based on the conditions likely to be operating, is planned.
10. Throughout the period monthly reports are made to keep each executive informed of the progress his department is making in relation to the budgetary plan.

Figure No. 5 shows a chart of anticipated operations.

Reviewing the Budget.

It is possible that the results shown may be unfavourable, making revision of either the whole or some of the budgets necessary. The circumstances may even require a further amplification or a change of policy so that more satisfactory results could reasonably be expected. Perhaps the year's operations, whilst satisfactory in some respects, will result in certain ratios which would reveal a distinctly unhealthy tone or trend. The fact that profits would be satisfactory must not be taken as the sole guide. For example, the budgetary plan, though acceptable from a profit standpoint, may throw such strain on the finances as to warrant a closer examination of these factors. A more conservative attitude may have to be adopted and a search made for means of preserving the profit characteristics, while easing the burden on the finances as much as possible. Though the general position may be satisfactory, it might be desirable to alter one of the budgets, and this would probably mean that the others would also be affected. Thus, owing to seasonal trends it may be found that 60 per cent of the total annual sales

FIGURE No. 5.

PROGRAMME OF ANTICIPATED OPERATIONS.

Step No. 1. Sales Quotas (a)

Step No. 2. Sales Budget (a)

Step No. 1 (b)
Production Budget.

Step No. 2 (b)
Manufacturing Schedules.

Step No. 3 (b)
Materials Budget.

Step No. 4 (b)
Purchase Budget.

Step No. 5 (b)
Repairs and Maintenance
Budget.

Step No. 6 (b)
Plant and Equipment
Budget.

Step. No. 7 (b)
Labour and Payroll
Budget.

Step No. 8 (b)
Manufacturing Expense
Budget.

Step No. 3 (a)
Advertising
Budget.

Step No. 4 (a)
Selling Expense
Budget.

Step No. 5 (a)
Shipping and Transport
Budget.

Step No. 1 (c)
Office and
Administrative
Expense.

Step No. 1 (d)
Cash Budget.

Step No. 2 (d)
Profit and Loss Budget.

Step No. 3 (d)
Estimated Balance Sheet.

(a) By Sales Manager.

(b) By Factory Manager.

(c) By Office Manager.

(d) By Accountant or Secretary.

would be made in two months. To harmonise stocks and production, the manufacturing programme may have been planned to include an easy policy for ten months with a large amount of overtime just prior to the important selling season. The desirability firstly of keeping employees contented by working on as even a schedule as possible, and secondly of ensuring economies through a balanced manufacturing policy, may make it essential that production be spread over the year in a more uniform manner than was at first proposed. The most important matter, however, is the necessity for co-ordination. Each budget must harmonise with each and all of the others, for only by such methods can a balanced policy be obtained.

It is also necessary to prepare a programme setting forth the duties that are to be carried out in connection with budgetary preparation and installation and the dates for completion of the various estimates. Generally, few of the budgets can be set up until the sales budget is almost if not quite completed. It must not be assumed from this that the sales budget is first completed and then handed to the factory manager for the preparation of the production budget. It is usually found that the sales manager and the factory manager work together after a certain amount of the preliminary work in connection with the sales estimate has been completed. The sales manager knows that a balanced production policy will be of great help in carrying out sales programmes. Furthermore, it is useless to suggest a selling programme which is too expensive or too troublesome for the production department. Even if some alteration in selling plans becomes necessary, it is essential that the production programme be entirely practicable and not more than ordinarily expensive.

Budget Manual.

It becomes necessary, therefore, to systematise somewhat the procedure of the preparation of the various budgets, and it is generally the practice to arrange this by means of a budget manual, which sets forth a programme for preparation of all work necessary for the completion of the budgets, the master budget and the estimated profit and loss a/c and balance sheet. This would include such matters as—

1. An outline of the functions of the various individuals (including the executives) who are responsible for any portion of the preparation of any budget.
2. A statement of the steps in the preparation of the sales budget, including its submission, review, approval and final adoption.

3. The various matters connected with the preparation of the production budget and the materials and purchase budgets.
4. The preparation of budgetary functions in relation to such matters as labour, materials and expenses.
5. The preparation of departmental expense budgets.
6. The preparation and development of the plant and equipment budget.
7. The preparation and thorough examination of the financial budget.
8. The preparation of the final statements, together with the procedure to be followed in their submission, review and approval.

An example of a Budget Manual is shown in Figure No. 6.

The Master Budget.

When the whole of the figures for the period have been completed, a Master Budget is prepared. There is a great deal of variation in the use of this term. Sometimes it is meant to convey a complete set of the major budgets, irrespective of the Profit and Loss A/c and Balance Sheet. At times it is applied only to the expense budgets. The degree of detail included depends upon each particular company. Sometimes the whole of the statements which have been used in the preparation of the various budgets are included, but generally this is not so. Occasionally the Master Budget is used to refer to a single document, which sets forth the results of the various budgets and shows the estimated net profit or loss in the form shown in Figure No. 7. The set-up depends largely upon the character, size and requirements of the individual organisation. Other terms, such as Master Schedule and Summary Schedule are sometimes used in place of Master Budget. It seems advisable, however, that the Master Budget should be composed of—

1. The consolidated sales budget.
2. The condensed departmental budgets.
3. The financial budget.
4. The operating capital budget.
5. The budgeted profit and loss statement.
6. The budgeted balance sheet.

FIGURE No. 7.

MASTER BUDGET.

For Three Months ended 30th June, 1937.

Items	3 Months ended 30/6/37	April	May	June
Sales Budget.				
Product "A"				
" "B"				
" "C"				
Total				
Production Budget.				
Mfg. Cost Product "A"				
Mfg. Cost Product "B"				
Mfg. Cost Product "C"				
Total				
Marketing Expense Budget.				
Selling Expense ..				
Advertising				
Shipping				
Total				
Administrative Budget.				
Office Expense				
Administrative Expense				
Total				
Net Profit or Loss.				

Approval.

Before plans are finally put into operation they must be approved by the person or the committee having authority to do so. The approval procedure is generally as follows—

1. The submission of the Master Budget, including the various supporting documents, to the Budget Committee.
2. The holding of such meetings as may be necessary by the approving authority for the full consideration of each phase of the subject.
3. The summoning before it, where desirable, of the authorities who prepared the estimates, to obtain any further explanations or additional information that may be required.

4. The instruction of various authorities regarding such revisions as may be thought necessary, together with adjustments in related budgets, so as to arrive finally at a complete budget, which the budget committee or executive is able to accept.
5. The formal notice of approval by such authority, and its subsequent confirmation by the board of directors or the managing director.

Where the executive holding the final power of confirmation acts as chairman of the budgetary committee, the adoption of the figures by such committee automatically includes approval by the chief executive.

CHAPTER II

THE SALES BUDGET

The necessity for accuracy—distinction between forecasting and budgeting—principles of forecasting—general factors affecting forecasting—methods of forecasting—the desirable approach—analysis of the forecast—difficulties in forecasting—forecasting sales of a new product—special order trade—budget accuracy—responsibility for sales budget—the next step.

The Necessity for Accuracy.

Probably the most important figure in budgetary preparation, and often the most difficult to obtain, is the sales estimate. A reasonable degree of accuracy is frequently hard to achieve, yet is imperative because of the dependence of the other budgets on the sales predictions. If the degree of inaccuracy is at all large, some of the other predetermined figures, particularly the production estimates, will be based on erroneous premises, and misleading information may have serious consequences. The necessity for accuracy has hastened the abandonment of the method, previously so popular, of arriving at next year's figures by adding an arbitrary percentage to this year's results. Such a method is certainly simple but has little else to recommend it. No method will ensure absolute accuracy, but reasonably correct forecasts are much more likely to result from thorough market research and analysis and the application of this knowledge to the individual circumstances of the particular business. The preparation of a sales budget is always difficult, even where much experience in carrying out the work over a number of periods has been gained. Such factors as experience, wise judgment, a knowledge of market trends, statistical meaning and business conditions are most valuable aids, but even these, used with great care, are sometimes useless because of the development and operation of circumstances and events which were impossible of prediction when the sales estimates were completed. The outstanding example in such matters is the part played by weather conditions in industries which are liable to be affected by such matters.

Distinction Between Forecasting and Budgeting.

It is necessary at the outset to note the difference between these two subjects. A forecast is a determination and statement of probable future conditions, formulated in the light of past and current business activity, and from this the plan necessary to enable the business to meet those conditions is prepared.

As against this, a budget is a plan of internal operation, covering the anticipated operating and financial conditions of a specific company.

Principles of Forecasting.

In attempting any forecast, the following factors should be borne in mind—

1. Accuracy in prediction is very largely dependent upon, and is often in proportion to, the amount of knowledge of essential facts.
2. It is generally impossible to predict uncontrollable factors, but it is possible to limit their effect.
3. The more conditional factors there are, the less accurate the prediction is likely to be, because of the difficulty of gauging many possible situations.
4. What has happened in the past under certain conditions is most likely to occur in the future under similar conditions.
5. The shorter the period to be covered by the forecast, the greater the chance of accuracy, because unexpected factors are likely to be fewer
6. The more rhythmic the movement, the more accurate the prediction.
7. The accuracy of the prediction depends primarily upon the skill and judgment of the person making the forecast.

It will be seen from the foregoing that care should be exercised in the choice of the person to make the forecast.

General Factors Affecting Forecasting.

Though practically all businesses are affected by external conditions, some are much more sensitive to them than others. The main factors which affect forecasting are—

1. *The Business Cycle Changes.*

The full explanation of the business cycle and its working need not be discussed here, as there are numerous books dealing specifically with the subject. The effect of the business cycle upon general business conditions has been amply exemplified during the recent depression, and generally the various stages

can be traced in selling results. It is sometimes overlooked that during a general depression some products sell better than others, but no matter what the position may be the effect of the business cycle upon conditions generally and the sales of the business in particular should be examined and carefully analysed. Trends should be watched and an attempt made to arrive at the probable future effects of the working out of the remainder of the cycle. (See Figure No. 8.)

In America it has been calculated that over a long period the following business cycles occurred—

1	taking	1 year	—	1	year
1	”	7 years	—	7	years
1	”	9 ”	—	9	”
4	”	2 ”	—	8	”
4	”	6 ”	—	24	”
5	”	4 ”	—	20	”
6	”	5 ”	—	30	”
10	”	3 ”	—	30	”
32	cycles			129	years

Average per Cycle	—	4 years.
Largest number	—	10 cycles taking 3 years.
Next largest number	—	6 cycles taking 5 years.

The foregoing figures seem to indicate that under such conditions a current 3 to 5 year average to show cyclic conditions should be taken by adding and dropping a year.

2. *Seasonal Characteristics.*

In some businesses which are greatly affected by weather conditions (for example, the ice industry) extensive research into past climatic records is made in an endeavour to discover correlations which will make possible some prediction of future possibilities. While it would be inexpedient to rely over much upon any such predictions, they may have some influence upon the plotting of the general estimates. One of the logical outcomes of the difficulties both of forecasting and selling lines which are affected by seasonal conditions, is the attempt to balance weather influences by the addition of other products or manufactures. Thus, to the manufacture of products which are almost solely confined to winter selling, other products which are in demand during the summer are added. The simple illustration of such conditions in the very small business is the supply of both fuel and ice. (See Figure No. 9.)

Where primary products are marketed, the seasonal prospects must of necessity largely affect forecasts. Thus, if an

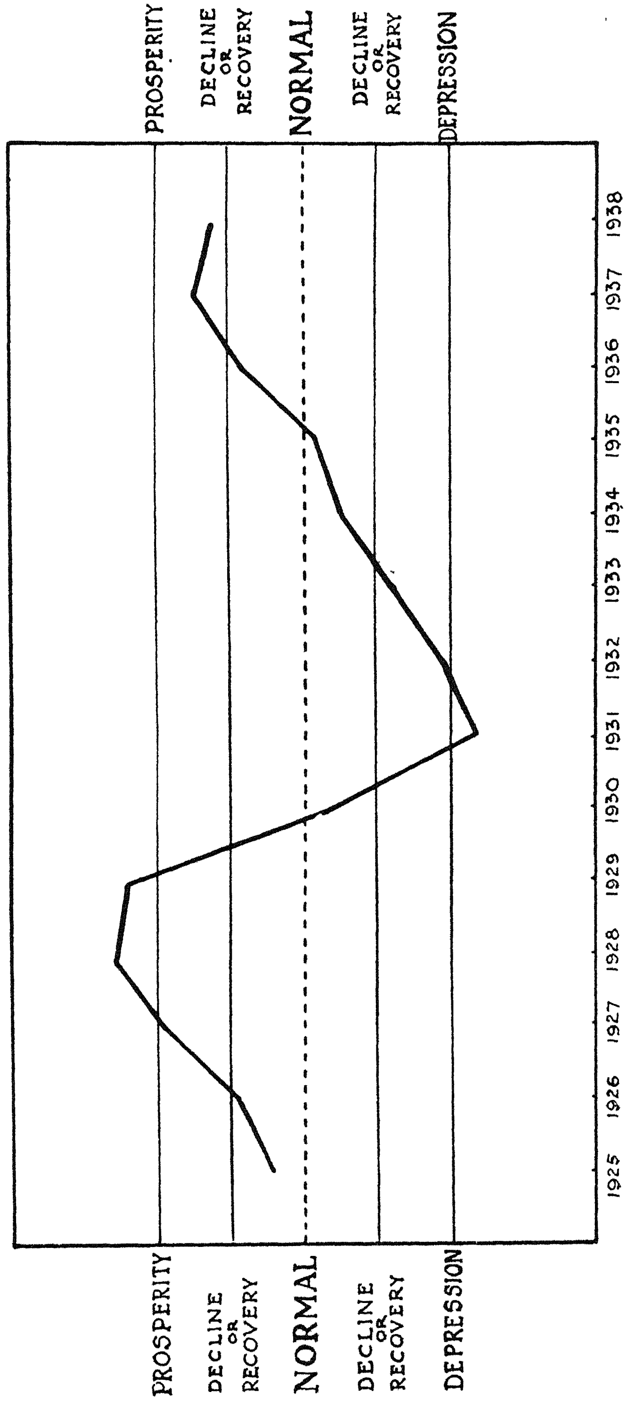
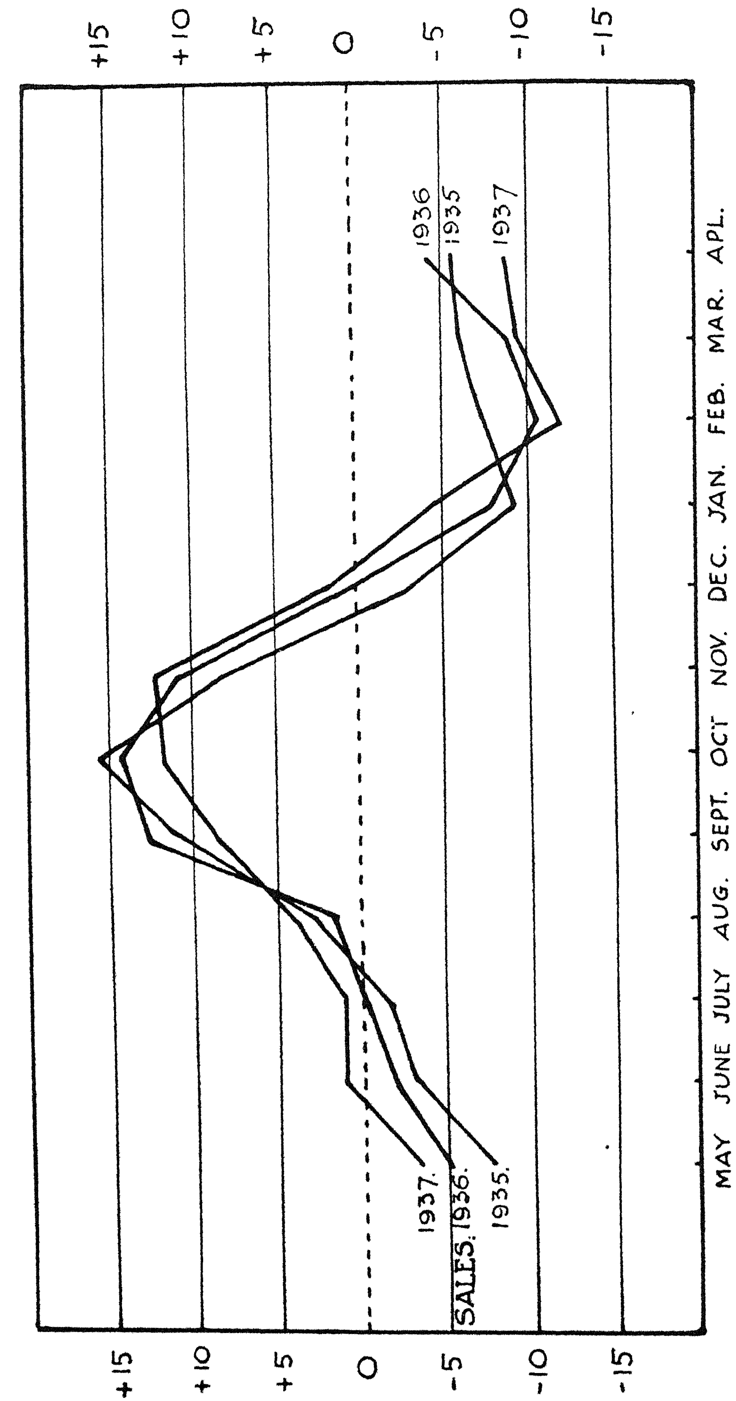


Figure No. 8: Business Cycles

FIGURE No. 9 = SEASONAL CHARACTERISTICS.



attempt is made to estimate the amount of wool which a commission firm expects to handle, the effect of weather conditions and the total expected supply of wool are matters of the greatest importance.

3. *The Secular Trend or Long-term Growth Element.*

This depends upon the product and the particular business whether an upward or downward tendency is shown. In certain industries where the demand has been very large over a comparatively short period, possibly because of new inventions or increased value or service, there comes a stage when sales begin to fall off despite the employment of all conceivable selling aids. The sales in the past may have grown to remarkable dimensions. In order to take care of this growth, the productive capacities of plants may have been expanded to the fullest extent, and a position may then develop wherein the total capacity of all plants greatly exceeds the total possible demand. At least some of the plants cannot arrange sales in anything like the volume that would necessitate a capacity production. The manufacturer of gramophones may be taken as a case in point, but this industry was able to extend itself by catering for radio. The trend in matters such as these is of the utmost importance and must be taken into account when arriving at budgetary estimates. (See Figure No. 10.)

4. *The Probable Activities of Competitors.*

This is included under the heading of special matters affecting forecasting, because its action is often important. The outstanding instance is that of the company which, in the past, has enjoyed unrestricted selling programmes as a result of patent protection. Upon the expiration of the patent, the company would probably meet much stronger competition and acknowledgment of this factor would reflect in the sales estimates. Similarly, a new invention or a greatly improved product put on the market by a competitor may have a very adverse effect on sales. These possibilities should therefore be investigated and attempts made to anticipate competitors' intentions.

Methods of Forecasting.

There are several methods of arriving at sales forecasts, and they can be used singly or in combination. Each organisation must decide for itself the course to be pursued. The following are the most important factors—

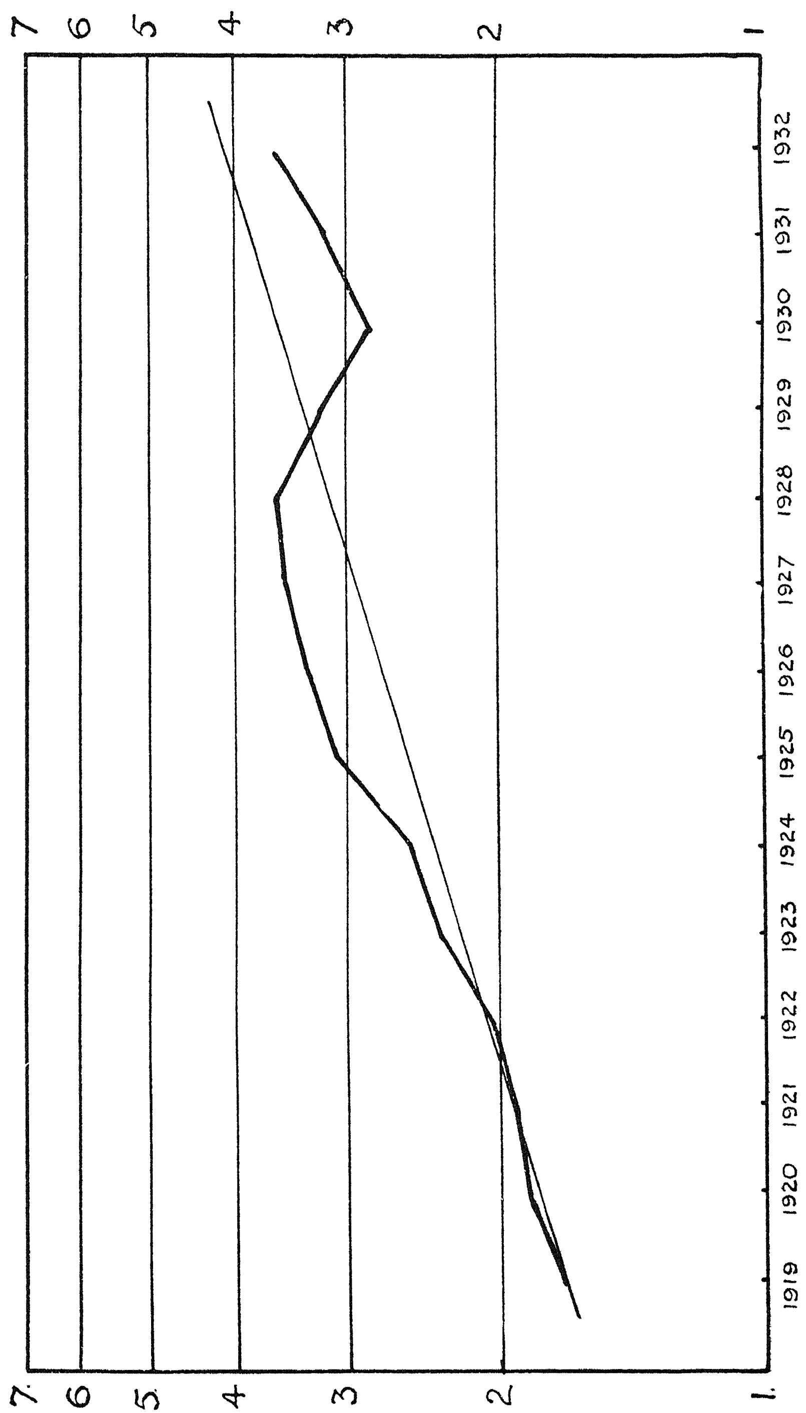
A. External Factors

1. *The Percentage of Industry Method.*

The estimate of likely sales for the whole of the industry for the period is ascertained and the company's proportion of this total is calculated. This method assumes that the company can depend upon securing a more or less known percentage of the total sales, and in most countries is not a very common method. Sometimes, however, a consideration of this factor is useful and provides a closer estimate than could be arrived at by other means. For example, an organisation specialising in the manufacture of electric motors may know that its past results have proved that it can depend upon getting approximately 20 per cent of the total sales made by the industry. Comparisons in the past may have shown remarkable steadiness in this regard, and the correlation between its own sales and those of the industry may prove it to be a most useful guide. It may therefore be possible to dispense with all other considerations except those which come from an expression of policy. Thus, the company may decide that the advertising budget and the selling expense budget should be increased by 50 per cent, in order to try to increase the company's proportion of the total sales from 20 per cent to 25 per cent. The main difficulty with this method of forecasting sales is to arrive at the total sales of the industry. In those countries where statistical aids have been greatly developed, the practice is more common. In some countries statistics are available in relation to a few industries only, and in these cases it is often found that the figures have been prepared from a standpoint with which the company cannot harmonise its own figures. This method is sometimes used in connection with one individual product in order to arrive at the sales of that particular commodity. Where it is desired to adopt this method of forecasting, the following means can be employed—

(a) Curves should be plotted—one, of general business conditions and results covering the product or commodity of the industry in general, the other showing the results of the particular company. An endeavour should then be made to find a fixed relationship between the two. It may be found, for example, that where business is 15 per cent above normal, the company shows an increase of 10 per cent over the normal figure. An attempt should then be made to estimate the condition of industry for the coming year, and if it was concluded that the industry in general was likely to show an improvement to 30 per cent above normal, it may be implied that the company's turnover would approximate 20 per cent above normal. Sometimes no actual attempt to arrive at any mathematical

FIGURE No. 10: LONG TERM GROWTH.



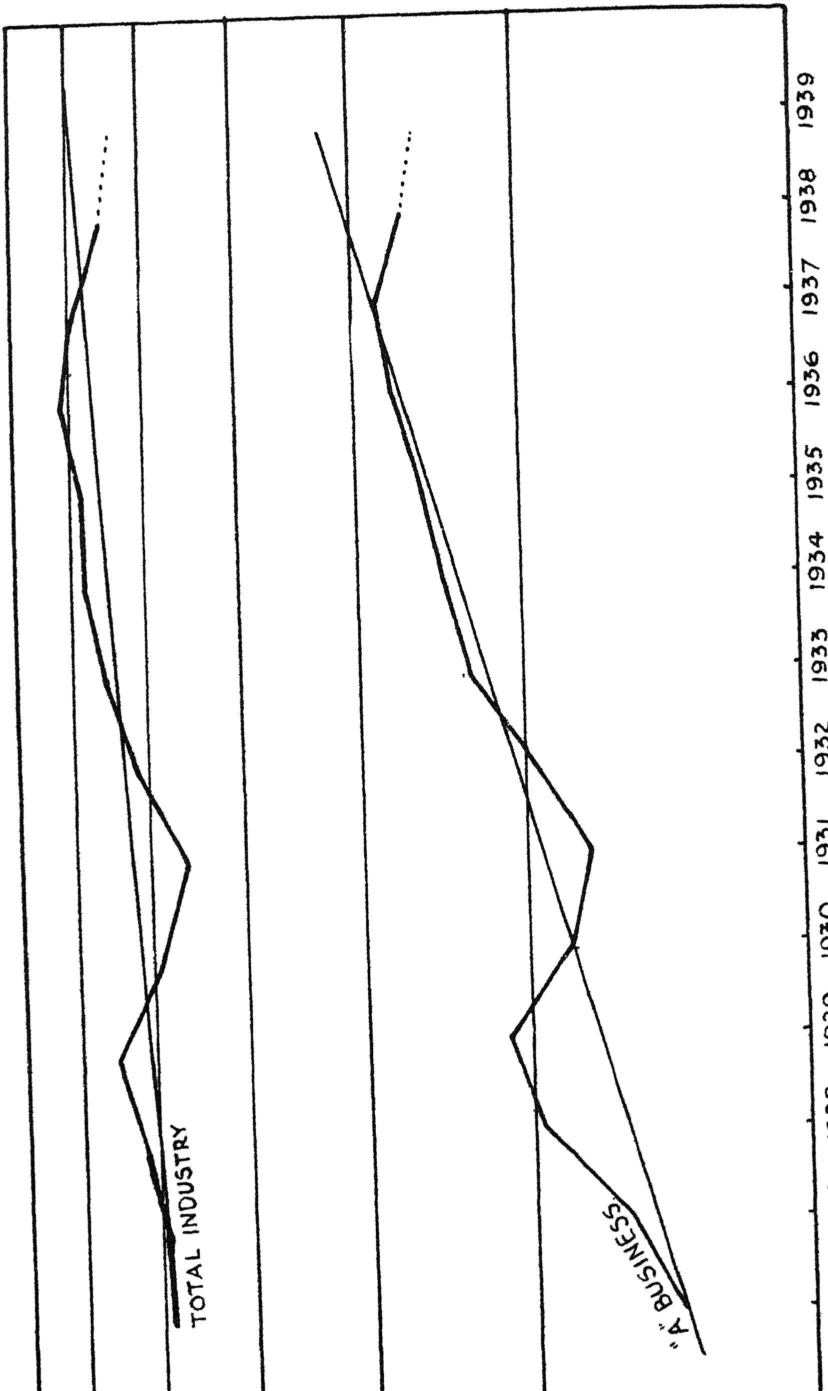


FIGURE No. 11 = RELATIONSHIP TO INDUSTRY.

relationship between the two curves is made, but an extension of the industry line is attempted in accordance with the estimated results that will be shown by the industry in general over the succeeding period. The trend thus shown is projected through the company's curve and the result translated into sales values. (See Figure No. 11.)

(b) It is sometimes possible to discover another kind of relationship between the individual and the general. It is well known that changes in a business cycle affect some industries later than others. For example, it will often be found that—

1. Wholesale prices move first and furthest.
2. Retail prices move more slowly and less violently.
3. Wage levels change more slowly than prices.
4. Manufactured articles have a high labour content, and change their prices more slowly than raw materials having a low labour content.
5. Salaries change more slowly than wages.
6. Rents change more slowly than prices or wages.

It may therefore be found that the operation of one or other of these conditions may mean that the company's sales rise or fall during a certain almost fixed period after a corresponding rise or fall has been shown by some phase of general industry. If some definite logical cause or relation can be shown to exist and to account for this position, more notice can be taken of the disclosed facts, and it may be possible to calculate some basis for computing the sales of the individual company.

2. *The Method of Historical Analogy.*

By this method an attempt is made to discover some past period whose characteristics bear close analogy to those operating for the current period. This method is based upon the assumption that where conditions are similar, results will also show a resemblance. The results for the previous period showing the points of similarity are therefore examined and the estimate for the present period calculated in the light of the previous achievements, allowances being made for the natural growth of the company since the last like period, and for any special conditions likely to operate.

3. *The General Position of Industry.*

Especially since the depression, this method has found increasing favour, because abnormal conditions have prevented comparisons with previous periods. The sales estimate is arrived at by means of a thorough analysis of the whole of the factors disclosed by the current situation and an estimate of the effect of these upon the industry in general and upon the company in particular. Thus, the general state of business over the past

two or three years could be carefully examined and attempts made to judge the degree of recovery likely to operate for the period being budgeted. If it is felt that business will probably improve by 20 per cent, the company would then estimate its sales allowing for an increase in its own figures to this extent. The judgment is based upon the view that the company can reasonably expect to command its share of the increase resulting from the return towards business prosperity. Sometimes market indices are used for this purpose. The following factors are amongst those most commonly used in matters of this kind—

1. Fluctuations of commodity price indices (raw material, wholesale commodities and retail commodities).
2. Bank clearings, cheque transactions, etc.
3. Stock and bonds and Stock Exchange quotations.
4. Raw material production including the condition of all primary industries, wool, wheat, timber, fruit. dairy produce.
5. Gold prices, gold share movements.
6. Weather conditions and predictions.
7. Overseas trade.
8. Business conditions generally, including bankruptcies, deeds of arrangements, etc.
9. Political conditions (including election dates).
10. Building and real estate activity.
11. Business profit and turnover trends.
12. Labour conditions.

Many others could be added, but each individual business must ascertain for itself those statistics likely to be of most use. Sometimes a weighted average is necessary in the case of factors which are of particular importance. Thus, the manufacturers of motor car speedometers would be much more interested in the trend of motor vehicle registration of new cars and trucks than almost any other factor, and despite variations between business conditions in the automobile trade and general industry, would be much more likely to treat the trend of the former as of greater importance. Nevertheless, any weakness in the general position would necessitate a more careful analysis of the whole outlook.

B. Internal Factors.

The foregoing methods of sales forecasting are based upon the principle of foretelling the probable results from an examination of external factors. While due note must always be taken of such factors—the external angle can never be dispensed

with—many companies approach the sales estimates from an internal angle. The commencing point is governed by internal considerations. In such cases, it is possible to distinguish between two main methods of approach—

1. "From the Top Down."
2. "From the Bottom Up."

1. *"From the Top Down."*

This refers to the process which is very often adopted of arranging for the business or sales executives to complete the estimates of sales, and then to allot these figures to various territories and salesmen. The estimate is made as a result of an examination of outside conditions, plus a study of the trend of the organization's sales. Of late, the necessity for taking as a commencing point the amount of profit that it is desired to obtain has been urged upon executives. A thorough analysis of all pertinent factors is then made to ascertain the amount of sales (including full particulars regarding lines, products, etc.) which must be obtained to secure the stipulated return. This involves a knowledge of the cost of production of the goods being sold, so that the margin between total cost and total sales gives the desired profits.

The total estimated sales should be broken down into lines, products and units to facilitate the preparation of the Production and Expense Budgets later. Depending upon the particular business, it is also often desirable to break the total down into estimates covering separate territories, covered by individual salesmen or groups of salesmen.

Sometimes estimates are made of what it is considered the sales in a particular territory should be, and then, in the light of past figures and experience, decide what they probably will be. In this way any disparities between what could reasonably be expected and what probably will result can be inquired into, and the result of such inquiries may mean a bracing up of the staff and possibly the adoption of special methods, designed to bring the probable sales nearer to the estimate of what should be secured. Sometimes market indices are used for each particular territory. Where these are not available, attempts at calculations may be sufficiently inconclusive to make it desirable that some other method of forecasting be adopted. In any case, it is usual to see that territorial forecasts based upon market indices are checked with the actual results which were obtained in previous periods.

2. *"From the Bottom Up."*

The second method is much more in favour. Estimates of future sales covering the various territories are gathered from all possible channels, but much importance is placed upon the

views of the company's own salesmen, and, where such exist, branch managers. It can reasonably be expected that salesmen possess the closest knowledge of the conditions that operate in their territories and should be well acquainted with all local factors likely to react favourably or otherwise in the near future. Furthermore, the salesmen are much more likely to give a maximum of co-operation when they themselves have played some part in the arrangement and estimates of sales quotas. There are, however, difficulties. Few salesmen are quite unbiased. They may be tempted to set too high a figure in order to secure praise, or to place the estimates unfairly low to ensure that they will have little difficulty in exceeding them In addition, salesmen are rarely in a position to estimate closely the effect of organisation policies on sales. Under ordinary circumstances, a company's percentage of sales, compared with total industry figures, will not vary very greatly. Competition alone is usually sufficient to ensure a certain amount of stability along these lines. Optimistic forecasts based upon new policies may be entirely misleading in the absence of information concerning the plans of competitors, who may also have decided upon increased efforts. Similarly, price cutting may not always yield hoped for results, because where such reductions commence to interfere seriously with competitors' business, the price cutting will generally be met. Thus the company will probably secure the same percentage of the trade as it secured previously, but with an important decrease in the profit percentage. The foregoing must not be construed as an argument against attempts to increase sales. Very often improvements in products sold, a general toning up of service, new advertising campaigns, additional sales remuneration and similar matters will bring an increased turnover. Market analysis will be found most valuable in this direction.

The Desirable Approach.

Each of the foregoing methods leaves something to be desired, and it was only a question of time before an alternative, designed to embody the best features of the two, was evolved. In this case the sales executive, taking into account the whole of the conditions, including policies which are likely to have any effect upon his forecasts, prepares a preliminary estimate of the expected volume of sales. The steps in this preparation are—

1. Examination of the data of past sales in units by lines—
   (a) as sold by direct salesmen.
   (b) as sold by agents or distributors.
   (c) as sold by other means.

2. Preliminary sales forecast made in units by lines—
   (a) as sold by direct salesmen.
   (b) as sold by agents or distributors.
   (c) as sold by other means.
3. The preliminary forecasts are checked with available statistics, and with salesmen's estimates.
4. The report of market research work is received and surveys of general business conditions with any recommendations which may be made, and the preliminary estimates are closely examined in the light of this additional information.
5. The final sales forecast is made in units by lines.
6. Using the tentative sales price list, the value of the various unit and line sales is ascertained.

(See Figures 12, 13 and 14.)

The following is a suggested alternative outline of the methods to be adopted—

1. The expected volume of sales for the whole industry is estimated and then the proportion expected for the particular business.
2. Past history, past and present trends, market analyses, opinions of salesmen and sales consultants are considered.
3. A preliminary sales forecast is prepared in the light of the foregoing studies.
4. Turnovers of Plant, Inventories and Operating Capital are considered, both from actual and desirable standpoints.
5. Probable resultant financial conditions are examined.
6. Profitability of lines is considered.
7. An investigation of the desirability of adding new lines and/or dropping old ones is considered.
8. The final forecast of sales is made.
9. Sales quotas for territories and salesmen are established.
10. Sales programmes are planned.
11. Salesmen's remuneration and expenses are decided upon.
12. Methods for exercising control over sales results and sales expense are planned.

Referring again to the results arrived at by the National Industrial Conference Board (U.S.A.) it was found that of eighty-seven companies, fifty-six extended values, nineteen did not do so, whilst twelve took out the original estimates in values.

FIGURE No. 12.

SALES BUDGET.

By Territories.

Particulars	Total	"A" territory	"B" territory	"C" territory	"D" territory	"E" territory	"F" territory
January—							
Budget ..							
Actual ..							
Gain							
Loss							
February—							
Budget .							
Actual ..							
Gain							
Loss							
March—							
Budget ..							
Actual ..							
Gain							
Loss							

FIGURE No. 13.

SALES BUDGET.

By Groups of Products.

Particulars	This Month		Next Month		Cumulative	
	Budget	Actual	Budget	Actual	Increase on Budget	Decrease on Budget
Group No. 27.						
Paints—Seal Brand						
,, Arctic ..						
,, Eskimo ..						
Group No. 28.						
Red Lead						
White Lead						

In addition thirty-four companies out of a total of eighty-four listed all items separately. A further forty-four companies prepared groups of products and six others set out the main products separately and others by groups.

Analysis of the Forecast.

When the company's forecast and quotas for the period ahead are established regardless of the method used, the next

FIGURE No. 14.
SALES BUDGET.
By Salesmen's Quotas.

Salesman	January		February		March	
	Units	Volume	Units	Volume	Units	Volume
Brown A.—						
Budget						
Actual						
Gain						
Loss						
Gain (Accumulated)						
Loss „						
Smith B.—						
Budget						
Actual						
Gain						
Loss						
Gain (Accumulated)						
Loss „						

task is to break these down into months and quarters, and even weeks, where required. This information used to be required mainly to facilitate the preparation of the production budget, but recently it has become increasingly evident that it is of equal value in the setting of standards to cover the control of selling, advertising and marketing costs.

Difficulties in Forecasting.

Sometimes it is found that the specific problem of determining sales probability is extremely complex because—

1. The number of items is extremely large and greatly varied.
2. Lack of any previous systematic planning within the business is evident.
3. The business is not of a repetitive nature.

These difficulties can often be minimised by—

1. A study of the various products in order to arrive at groups or classifications which will embrace the whole or a major portion of the various items.
2. The education of the responsible leaders of the organisation towards planned activities
3. A thorough search for correlations sufficient to allow an accurate forecast to be made, even though there may be differences in product quantities.

Difficulty is also often experienced in breaking down the volume of sales, expressed in value, into units and products. This will frequently be the case where past sales analysis has not included a segregation of the various lines. It is usual, under these circumstances, to adopt the same method as has already been described of classifying various products within groups having something in the nature of common characteristics, and affected similarly by economic conditions. Great care is necessary in arriving at these groups, and it is a good practice to check the results by an examination of what actually occurred in the previous period, where such figures can be obtained.

Forecasting Sales of a New Product.

Generally in cases of this kind, some preliminary market research work has been carried out, and the results of such investigation would be available. The work to be covered would include—

1. A general preliminary survey of the market covering—
   (a) location,
   (b) population and territories.
   (c) industries and pursuits.
2. A decision as to the method of approach, whether this be done by personal visitation or by correspondence or by advertising.
3. An examination of the results tabulated, including potential consumption, competition, and any special considerations.
4. The suggested approach to the market, including when and how the market should be attacked, the advertising necessary, the expenditure to be authorised, the methods to be adopted, salesmen and sales literature required, methods of meeting competition and the prices desired.

From this information, the sales estimate would be prepared.

Special Order Trade.

Special difficulties are often encountered by concerns whose business consists largely or solely of special orders, which are often to specifications not known until the order is actually lodged. The troubles experienced in preparing budgets in such cases can readily be realised. Sometimes no two orders are alike. These cases necessitate a search for some correlation

which will ultimately serve as the basis for preparing estimates. Thus, even in the case of special order businesses, it may be found that, while products vary consistently, the kinds of raw material and the classes of labour may be strikingly of a standard. The search for information of this kind may lead to possibilities of formulating estimates based upon these two cost elements, either in quantity, in value, in weight or some other measure. It is remarkable how well this plan sometimes works in cases which look to be most difficult. For example, a company manufacturing wireless valves has found the best denominator to be a tonnage value.

Notwithstanding the differences between various orders, it will usually be found that much experience and data are available and frequently use can be made of standard designs and parts, which may have to be manufactured despite the differences in final orders. It is true that a manufacturer cannot price something that he does not know he is going to make, but he may be able to say that if his sales of a certain type of product amount to £20,000, the material cost and the labour cost will average certain respective percentages of the selling total. In the case of contractors preparing tenders for special orders, it is sometimes found that the most practical method of budgeting is to take each individual contract, breaking it down into the various costs, such as material, direct labour, indirect labour, overhead expenses, etc., and arranging current daily or weekly checks on each part of the undertaking as the contract is proceeded with. In this way a shipbuilding company endeavours to budget labour costs by segregating the total wages incurred in connection with a typical freighter into approximately 100 units, each of which is budgeted. This breakdown then permits the localisation of any marked variation between the budgeted and the actual, and fixes the responsibilities for such.

Sometimes the position may be simplified in succeeding periods by—

1. Repeat orders growing out of special orders.
2. Procuring from customers estimates of requirements in general terms.
3. Finalising future contracts.
4. A common measure may be established, enabling planning to be done in yards, tons, etc.
5. The greater portion of the special orders may have certain common characteristics, which may be used as the basis for planning.

It must be recognised that some of these solutions frequently almost take the examples from the realms of budgeting and place them within those of standard costs. Especially will this

be so in the case of the use of estimates which have been prepared for arriving at a tender price, and where such estimates are afterwards used as a series of standard costs for the job. The preparation of budgets for special order businesses is frequently less satisfactory than for other concerns, except where it is possible to discover some element in the sales of previous periods which enables a reasonably accurate forecast to be prepared. Where special order sales constitute the bulk of the turnover and the greatest difficulty is experienced in arriving at budgetary estimates, it may be desirable to adopt something of a compromise. This could be done by arriving at the total volume of the expected sales as a result of a thorough analysis and examination of past sales and of all external and internal factors which are likely to have either direct or indirect bearing upon business conditions in general, and upon the company's in particular, during the period which is the subject of the forecast. This analysis must be extended to include estimates of what can be expected in the way of operating profits. No attempt may then be made to break down the total figure to show any greater detail. When actual special orders are proceeded with, the estimates made out at the time of tendering can be used to exercise control over the profits to be expected from the various transactions. This method may be open to objections, but is frequently used and generally found to be of value. Because no individual costs (beyond the estimated costs) are attempted until the actual order is in hand, control must be increasingly obtained through standard costs methods. It must be remembered that methods such as these can be adopted where ordinary methods are unsuitable or do not give the degree of accuracy desired. Nevertheless, the mistake should not be made of being too willing to cast aside the usual methods of budgeting because problems confront. There are difficulties in all budgets, but most of them will yield to careful planning and analysis. On the other hand, a stilted attitude is rarely in the best interests of the organisation and if it is apparent that a departure from usual methods is called for, the step should be taken without hesitation.

Budget Accuracy.

One of the main objections urged against budgeting is that, depending as it does upon the validity of the sales forecast, it can only achieve a degree of accuracy commensurate with the accuracy of the forecast. The reply to this charge is to be found in the Flexible Budget. Even so, the objection is not actually a powerful one, because while a budget aims at 100 per cent accuracy, the fact that it does not achieve perfection

by no means destroys its value. If this were so, little planning of any kind would be acceptable, unless it coincided exactly with actual results. The argument raised against the budget, therefore, resolves itself into a condemnation of all planning. Nevertheless, too much care and attention cannot be paid to accuracy. Variations between budgeted and actual figures will certainly lessen the value of forecasts, and wide discrepancies may seriously upset an organisation's plans and position, especially if the errors are not quickly recognised. Thus a production policy much in excess of requirements may be inaugurated; stocks may be increased out of all proportion to actual sales; the financial position may be affected and the effect upon the profit position may well become very serious. Even where sales have been under-estimated, equally difficult situations can arise. Perhaps it will be found that sales will be lost and discontent be engendered through shortage of stocks consequent upon an over-restricted manufacturing programme. Too much stress therefore cannot be laid upon the desirability of accuracy in sales forecasts.

Responsibility for Sales Budget.

The sales manager is generally responsible for the preparation of this budget, no matter by what method it is compiled. With responsibility there must be power, and the sales manager should be expected to do everything possible to keep his actual sales at a figure at least as high as his estimates. The methods to be adopted in this regard are more fully dealt with later.

The Next Step.

Once the Sales Budget is completed, it becomes possible to proceed with the estimates of production factors and also with marketing costs. Sometimes some of the latter (e.g. advertising appropriation) are determined before the Sales Budget is completed. In such cases the volume of sales to be expected depends upon the amount spent on advertising. It is now possible to proceed to an analysis of the budget covering the costs of selling and handling the products set forth in the sales budget.

CHAPTER III

MARKETING EXPENSE BUDGETS

Reasons for abnormal increase in marketing expense—necessity for study of marketing costs—budgets covered by marketing costs—the selling expense budget—reasons for preparation—interrelation between sales budget and selling expense budget—standards in marketing costs—expenses to be covered—steps in setting up marketing standards—ratio of selling costs to sales—the advertising expense budget—aims—factors in fixing appropriation—methods of arriving at appropriation figure—preparation of the advertising budget—advantages of the advertising plan—co-ordination of functions—objections to advertising appropriation—packing, shipping and transportation budget—responsibility for expenses—conclusion.

Reasons for Abnormal Increase in Marketing Expense.

One of the most remarkable and possibly disturbing factors in the development of business over the last decade has been the abnormal increase in marketing costs. These comprise those expenses which are incurred in getting the finished product from the warehouse floor to the buyer, including advertising, selling expenses, and frequently the costs of invoicing and collection of accounts. The increases can be traced to the following causes—

1. The common desire for increased turnover, resulting in the extension of selling operations into areas where volume is small.
2. The introduction of more hand-to-mouth buying with consequent reduction in the average size of orders and increased sales visits and handling charges.
3. The growth of competition, which has resulted in the granting of additional benefits, under the guise of service.

The problem of marketing costs became more serious as falls in turnover became more general. Rising sales volumes largely hid the extra expenses, but when the position was reversed, the growth in costs of securing orders often became almost startlingly apparent.

Necessity for Study of Marketing Costs.

It is remarkable that so little attention has been paid to the investigation and interpretation of these expenses. It is common to find businesses, which are extremely careful in the matter of production costs, going to long lengths to secure efficiency, yet devoting no attention to selling costs. The preparation of budgets and the exercise of control through these would certainly make for greater progress. In cases of falling turnover it is frequently found that the only way to maintain or to obtain profits is through cost reduction, and marketing expenses should bear their just proportion. Often sections of marketing costs (for example, advertising) must be increased, but there are still many avenues for reduction. In practically all cases studies of costs will show some phases in which waste has occurred and concentration can be made upon these.

Budgets Covered by Marketing Costs.

The budgets necessary to cover marketing costs are—

1. The Selling Expense Budget.
2. The Advertising Budget.
3. The Packing and Transportation Expense Budget.

1. The Selling Expense Budget.

This budget is generally prepared by the sales manager, though occasionally it is delegated to his assistant. Sometimes it is compiled at the same time as the sales budget, whilst at others it is prepared after this latter has been completed. Frequently it is found that many of the records necessary for preparing the selling expense estimates must come from the accounting department. Indeed, in certain somewhat exceptional cases, the budget itself is prepared by the accounting department, though this practice is not recommended. Where the assistant sales manager is in charge of the preparation, the completed figures, either in a tentative or completed form, are submitted to the sales manager for his approval. When finality is reached, the figures are included with the sales budget, or as a separate budget, or as part of a marketing expense budget. The latter generally has most to recommend it. Sometimes advertising expense is not treated separately, but is prepared in conjunction with selling expense, especially where the sales manager is in charge of advertising and the appropriation is small.

Reasons for Preparation.

The main purposes of this budget are—

1. To provide estimates of the cost of carrying out the sales work necessary to realise the sales budget figures.
2. To provide a basis for judging the desirability of working a territory, by giving some indication of the probable expense.
3. To show what the financial requirements of the company for expenses of this kind are likely to be.
4. To provide standards which will in themselves enable checks on actual results to be made, and to facilitate control over all accounts.

In order that these aims may be achieved, a preliminary essential is the exact definition of all selling expenses, and their classification in terms of responsibility.

Interrelation between Sales Budget and Selling Expense Budget.

As in the case of sales forecasts, the setting of sales expense budgets is greatly facilitated by the availability of past figures. Nevertheless, current conditions must always be taken into account. Frequently, in estimating volume for a territory, it is also necessary to fix an allowance for selling expenses. Alternatively, it may be necessary to go through the sales budget estimating the expenses that will have to be incurred in order to realise the figures which have been laid down. Individual circumstances will be the best guide as to which method should be adopted. Where expenses are determined at the same time as quotas, it is often possible to make appreciable savings by slight alterations in the figures of both. For example, to transfer a salesman from a particular territory may mean a drop in turnover, but may nevertheless increase the actual profit from that territory. It is well known that it often pays to increase expense, and such an increase wisely directed may mean a profitable increase in sales. Furthermore, as long as the statistical data is available, expected results may be analysed sufficiently to be able to turn a loss into a profit, possibly by concentrating upon major or profitable products. Maximum control over selling costs can best be obtained by the use of standards similar to those which are used to control production costs. Not only is it necessary to set up an aggregate amount which will be spent for a given function, but also to establish a unit allowance for the performance of those functions for which some basic unit can be selected. The adoption of such units

will give a greater degree of control and tend towards greater accuracy in the estimates. Variations can be investigated and the extent to which each variation is due to a change in the number of planned functional units, and the extent to which it is due to a change in the planned cost of each unit, can be determined Relative efficiency covering each class of expense can be gauged in this way.

Standards in Marketing Costs.

The use of standards in this connection necessitates a statement of what is meant by the term. In the past there has been much confusion of thought upon the precise kinds of standards indicated and only recently has the conception been clarified. Some treat the standards as representing ideal performance, that is, one which should be the ultimate objective. Others consider standard costs should be treated as an average of past costs. Others again indicate a standard as being the desirable and reasonable cost to be expected during the period. The last explanation more closely approximates the idea of standards when used in connection with budgeting, that is "budgeted standards." By a consideration of past performances and probable future conditions, both within and without the company, it is possible to forecast a level of performance, and to set up budgeted standards, which can reasonably be treated as being capable of accomplishment. Where care is exercised in the computation, variations between the budgeted and the actual can generally be divided into controllable and non-controllable differences and examinations designed to improve the position can be attempted.

Expenses to be Covered.

In addition to estimates of salesmen's salaries and expenses, it is necessary to arrive at forecasts of—

1. *Sales Office Expenses* (including office salaries, telephone, postages and telegrams, insurance, rent, etc.). It is unlikely that one period will greatly differ from another, and past results will therefore guide the current appropriation.
2. *Discounts and Bad Debts.* These are generally arrived at by an allowance on sales, the percentage being set after a survey of results of previous years, together with a close examination of debtors' accounts and the trend in relation to each individual account.

Steps in Setting up Marketing Standards.

The steps in setting up budgeted standards for marketing costs, through the use of units, are—

1. The grouping of the previous year's expenses according to the activities for which they were incurred. This is generally done from a bookkeeping standpoint, though it may be found necessary to vary the existing practice somewhat so as to facilitate apportionment. The alteration would provide for some better unit of measurement and would allow the costs on any individual function to be segregated in the accountancy system.
2. The selection of the units which will be used to measure the various services which were given in the past, and will be given during the future period. It is necessary to use care in the choice of a unit, though the same measure may be used for a number of expenses. Common units would be—
   (a) Calls made by a salesman.
   (b) Number of items in each order.
   (c) Number of sales accounts.
   (d) Number of sales invoices.
   (e) Number of sales orders.
   (f) Number of sales collections.
   (g) Mileage covered.

By dividing the total number of units for the past year or years into the total of the functional expenses incurred, the average unit expense can be obtained. Thus, if the total functional expense for the whole of a salesman's activities was £100 and 1000 visits were paid, the unit cost per visit would be 2s. The sales budget figures may have anticipated an increase in the number of visits to be made in the period covered by the budget. It may be estimated that these would be increased to 1200 visits, but it is not likely that the cost per visit would work out at the previous unit cost of 2s. As some of the visits can be made in conjunction with those that have been made in the past and which it is proposed to continue, the unit cost should possibly not exceed 1s. 10d., and the total functional cost to be allowed would therefore be 1200 times 1s. 10d., equalling £110. Alternatively, the result may be approached through a calculation that the extra 200 calls should mean an increase in expense of not more than £10, making £110 in all, and averaging out at 1s. 10d. per call.

A list of suggested functional service activities and units would be—

Activity.	*Work Covered.*	*Suggested Unit.*
1. Sales records.	Quotations, itineraries, orders.	Number of individual entries.
2. Sales promotion.	Search for new customers.	Fixed amount.
3. Sales promotion.	All kinds of letter writing necessary to promote sales.	Number of letters.
4. Recording of orders.	Entering orders, including all records necessary.	Number of orders.
5. Stock allocation and records.	Inventory control, keeping stock in order.	Number and value of stocks.
6. Warehousing.	Assembly of orders, rates and transportation.	Number of orders and number of shipments.
7. Invoicing.	Making out invoices.	Number of items.
8. Accounting.	Accepting cash, making out receipts, calculating commissions, assessing credit, posting debits, etc.	Number of accounts and number of orders.
9. Collections.	Usual work in this connection.	Number of accounts.
10. Sales Compensation.	Travelling Expenses.	Number of calls, and mileage.
11. Sales Remuneration.		Number and volume of orders.
12. Supervision.	By the Managing Director, etc.	Fixed amount.

Ratio of Selling Costs to Sales.

The selling expense budget therefore largely resolves itself into a preparation of estimates for the budget period based upon past results, but altered to take into account economies desired, differences between expected sales and past sales and variations in policy.

Once the total of all selling costs has been secured, it is a simple matter to arrive at the ratio existing between the selling cost and the sales. If the total sales amounted to £5000, and the expense amounted to £250, the ratio would be 1 in 20, and therefore 1s. in the £, or 5 per cent. Depending upon segregation of costs and statistics, the use of ratios can give greater control in special directions, and minor budgets supporting the selling expense budget can be prepared covering—

1. *Control Over Products.*

If the costs of selling any particular product are known and statistics are available covering the sales of such product, such standards can be set up to cover future costs. Thus a budget can be prepared for all products separately or for groups of

products or for major products only. This is very useful where a particular product is carrying a very fine margin of profit and strict control is desired. The statement setting forth the budgeted figures would appear as a supporting statement of the general selling expense budget. (See Figure No. 15.)

2. *Control Over Customer Classes.*

This is designed to set forth those customer classes which are unprofitable and to set down standards which will show whether they can be made profitable. Certain customers, perhaps because of geographical position, may never become a very profitable proposition, and a budget may be laid down so that the expenses can be kept within limits.

3. *Control Over Size of Orders.*

The idea of setting down budgets for these is to make certain that small orders are not allowed to play too large a part in total turnover. It is well known that the cost of fulfilling small orders is out of all proportion to that of large ones, and it is quite possible for a situation to emerge wherein, by an inordinate growth of small orders, profits would seriously fall. A budget would have the effect of not allowing such a position to develop without due notice of the variations being brought before the sales manager.

4. *Control Over Territory Costs.*

Quite often the total of selling expenses is approached by means of estimating the selling costs likely to be incurred in each territory. In any case it is often advisable to segregate the necessary particulars and statistics to allow a comparison of actual results with budgeted standards set up to govern the costs of each particular territory. Difficulties and differences between territories are always to be found, and a sales cost of 2s. 6d. may be a bad result in one territory, while a figure of 5s. may be a good one in another. Similarly taxation may require the closest analysis of results, and this may lead to the establishment of budgets for various states or territories. Where this procedure is adopted, the amount of the various functional costs relating to each territory is totalled, and this is reduced to unit or product costs. The information thus obtained is later compared with actual results and variations noted and inquired into. (See Figure No. 16.)

5. *Control Over Salesmen's Costs.*

Frequently selling expense quotas are set when sales figures are decided upon. Each salesman is expected to reach certain turnover figures and must do this while keeping his expenses

FIGURE No. 15.

SALES EXPENSE BUDGET.

Account	Product "A"		Product "B"		Product "C"		Product "D"		Total	
	Budget	Actual	Budget	Actual	Budget	Actual	Budget	Actual	Budget	Actual
Salesmen—Salaries										
„ Commission										
„ Trav. Exs.										
Postages and Telegrams										
Printing and Stationery										
Telephone										
Rent (Proportion)										
Executive										

within certain prescribed limits. Thus individual budgets are set up and variations in actual amounts spent are noted and examined. (See Figure No. 17.)

Some of the foregoing methods are used, not only to provide standards for control, but sometimes to facilitate the computation of the total selling expense budget.

2. The Advertising Expense Budget.

As stated previously, this may be treated as part of the selling expense budget where the advertising is under the direct control of the sales manager, or where the amount of the advertising appropriation is not large. Even where the two functions are administered separately, a large amount of co-operation and co-ordination of effort is essential. The amount of the advertising appropriation for the coming period is frequently fixed by the Board of Directors or by the chief executive, though it is general for both the advertising manager and the sales manager to be consulted. Where the two functions are administered separately, the need for seeing that the advertising policy is in accordance with the selling policy is of the utmost importance.

Even in those organisations which have in the past prepared budgets for certain of the activities of the business, it is not unusual to find that an advertising budget has not been included. Very often a statement by the advertising manager, couched in very general terms, has concluded with a submission of a certain sum as a recommendation for the advertising ap-

FIGURE No. 16.

SALES EXPENSE BUDGET.

By Territories.

Accounts	Total	A	B	C	D	E	F
Salesmen—							
Salaries ..							
Commission .							
Trav. Exs. .							
Postages and Telegrams .							
Printing and Stationery .							
Telephone ..							
Rent (Proportion)							
Executive ..							

FIGURE No. 17.

SALES EXPENSE BUDGET.

By Salesmen.

	Morrison	Burlinson	Giles	Palmer	Holder	Pike	Total
January 1935							
February 1935							
Accumulated							
March 1935							
Accumulated							
April 1935							
Accumulated							
May 1935							
Accumulated							
June 1935							
Accumulated							
Over-spent ..							
Under-spent ..							

propriation for the year or some lesser period, and this has gone forward to the Board of Directors for approval. This method is quite wrong unless advertising plays a most insignificant part, a lump sum allowance being then included with selling expenses.

In few cases will an advertising budget be found unnecessary. Nearly always it will be found most helpful, not only to control advertising expense, but also to allow the advertising manager to make his commitments in those fields likely to yield the best results.

The Aims of the Advertising Budget.

These can be stated as follows—

1. To make possible full review of expenditures and translate these into statements of results.
2. To obtain a bird's-eye view of the departmental activities.
3. To serve as a constant reminder of the responsibility for securing adequate returns upon the firm's advertising investment.
4. To serve as a danger signal calling attention to wastages and leaks, which can often be stopped before becoming serious.
5. To obtain a record of experience for future use.
6. To keep the various expenditures in proportion.

Factors in Fixing Appropriation.

The following factors should be taken into account in fixing advertising appropriation—

1. Advisability of advertising.
2. Efficiency of present advertising.
3. Best method for the future.
4. Copy angles and appeals.
5. Value of different media.
6. Value of contests, samples and displays.
7. Trade mark and slogan values.
8. Colour and position value.
9. Reaction to changes in advertising.
10. Competitive advertising value.

Methods of Arriving at Appropriation Figure.

There are several methods of arriving at the appropriation figure—

1. *Percentage of Sales or Profits Method.*

This involves the analysis of sales over the past one or more years, together with the amount which was spent on advertising during those periods. From this information the figure for the coming period is prepared after taking into account a fixed percentage of sales or of estimated profits based upon the previous results examined. Thus, if sales in 1935 were £250,000, and the advertising appropriation was £10,000, the advertising ratio to sales would be 4 per cent. If the estimated sales for the coming period were set down for £300,000, an amount of £12,000 would still represent 4 per cent allowed. A step further in this method can be taken by going back to previous periods, and forming an idea of trend. For example, it may be found that, in 1932, 5 per cent was allowed, in 1933 4¾ per cent, in 1934 4½ per cent, and in 1935 4 per cent. It may be decided that sales progress over those years has been quite satisfactory, and it is therefore proposed to make the appropriation for the then current year (1936) 3¾ per cent. This is not a good method, though applicable in certain cases. It takes no account of conditions likely to be experienced during the current year, or the possibility of differences from past years.

2. *The Task Method.*

A definition of the task to be accomplished is necessary, followed by a plan for working out the amount required to carry this out. The sum allowed should represent what is deemed to be a fair and equitable allowance to cover the cost of the advertising work contained in the plan Sometimes an alternative is advanced. If budgeted sales amounted to £250,000,

it may be decided to allow a certain sum to cover a turnover of £200,000, plus an extra amount, either fixed or variable, for each additional £10,000, £25,000, or £50,000 worth of sales obtained. This, of course, could be interpreted on a monthly basis.

3. *The Per Unit Method.*

Under this arrangement, a definite amount is levied on each product sold. The sales price of each product is taken to include an amount which will reimburse for advertising spent on that product. When sales are made, that proportion of the sales price is transferred to the advertising appropriation reserve, out of which all amounts for advertising are to come. Thus, in the case of an article selling for 1s., one-twelfth of the amount of all sales of this article may be used for the advertising reserve account, which account would control the amount and volume of the advertising to be done on this product. This method has the obvious weakness of limiting the advertising appropriation to amounts obtained from sales. This can seldom be recommended because advertising is often wisely increased when sales are poor. In addition, seasonal goods, for instance, should be advertised before the main selling season commences. Nevertheless, in certain cases this method can be adopted.

4. *The Business Conditions Method.*

This takes into account the state of trade as it is likely to be during the period to be covered by the budget. In the case of a depression, for example, some firms would, as part of a general policy to cut down on costs, reduce the advertising appropriation, while others, viewing the matter in a different light, would boldly increase the amount to be spent, recognising that only by such a measure would sales volume be preserved, or at least kept at as high a figure as possible. This is a common method and frequently employed after a thorough examination of sales possibilities for the coming period.

5. *The Watching Competitor Method.*

An attempt is made to gauge the amount to be spent on advertising by leading competitors, and an appropriation made based on such particulars. This idea is, however, not as commonly used to arrive at the appropriation, as it is in the actual spending of the money appropriated. Thus, a full-page newspaper advertisement (or a number of them) by a competitor is often taken to warrant a full page in reply.

6. *The Number of Prospective Purchasers Method.*

In order to adopt this method, it is necessary to know, firstly, the number of prospective purchasers that the advertis-

ing is designed to reach, and, secondly, the amount which it is thought would be a fit sum to pay per prospect. Though these are both hard to gauge, the former is especially so. It seems likely that only approximate estimates could be obtained, and therefore it is probable that it would be just as wise to fix on a sum outright, because, consciously or otherwise, some such sum would enter into the amount allowed per prospect.

7. *The Goodwill Method.*

This consists of an evaluation of goodwill and an appropriation based thereon. It is used on very few occasions and then only when special conditions make its use peculiarly advantageous.

While these are the main methods of approaching the advertising appropriation, frequently a combination of two or more is adopted.

Preparation of the Advertising Budget.

A suggested procedure to be adopted for preparing this budget is—

1. Statements should be obtained showing, firstly, the net sales, and secondly, the total advertising expense for the preceding year or years by—

(a) Territories.
(b) Products, major products, or groups of products.
(c) Character of media used.

2. A tentative total figure is set up for the following period. This is arrived at only after the closest consideration of past results, estimated sales for the future, and the probable profits. Close attention is given to the distribution of the products, particularly major products and groups of products which are expected to yield the figures.

3. The methods of spending past advertising appropriations are examined. In the light of past expenditures and past sales, it is possible to reach closer estimates of the worth of various types of advertising, ranging from newspaper and radio to window displays and samples. The intelligent administration of this function over previous years will make very much easier the assessing of relative values for budgeting advertising through different media. Frequently the advertising manager will find it necessary to consult those sub-executives who are in charge of each particular group of product sales.

4. Having arrived at the total amount to be spent over the period, this is spread over the advertising media, such as newspaper advertising, radio, posters, samples etc., a further division being made to show the amount to be spent in each month

FIGURE No. 18.

ADVERTISING BUDGET.

Showing Media.

Period	Total		Catalogues		Radio		Newspaper		Circulars		Novelties		Signs and Posters	
	Budget	Actual	Budget	Actual	Budget	Actual	Budget	Actual	Budget	Actual	Budget	Actual	Budget	Actual
January 1935 ..														
February 1935 Accumulated ..														
March 1935 Accumulated .. .														
April 1935 Accumulated														
May 1935 Accumulated														
June 1935 Accumulated														
Over-spent														
Under-spent .														

FIGURE NO. 19.

ADVERTISING BUDGET.

Showing Products.

Period	Total		Product "A"		Product "B"		Product "C"		Product "D"		Product "E"	
	Budget	Actual	Budget	Actual	Budget	Actual	Budget	Actual	Budget	Actual	Budget	Actual
January 1935 ..												
February 1935 Accumulated ..												
March 1935 Accumulated												
April 1935 Accumulated												
May 1935 Accumulated												
June 1935 Accumulated												
Over spent												
Under-spent ..												

during the period. This is especially necessary where certain forms of advertising demand special treatment during a particular season of the year, or where certain products have only a seasonal appeal. (See Figure No. 18.)

5. The budget thus prepared is used as the guiding plan to control the advertising activities during the budgetary period, and arrangements are made whereby the amounts which are actually spent are inserted against the budgeted amount. Attention is thus drawn immediately to any amounts over- or underspent.

6. Where desirable (and it will generally be found to be so) a further division of monthly media totals can be made by appropriating certain amounts to products, groups of products, or some other suitable division. This allows a further check and facilitates concentration where most desirable, especially in cases of special selling campaigns. (See Figure No. 19.)

7. To facilitate accounting definition and simplified advertising records, it is often advisable to adopt symbols. The media are distinguished by an account number and products are given a numerical index.

Advantages of the Advertising Plan.

A method such as this enables the advertising to be carried out according to a plan which will have the advantage of having been prearranged to ensure maximum value for the business as a whole. Where no such plan is available the money may be spent haphazardly, perhaps too much being diverted to one particular form of advertising, and one set of products receiving more than its due amount of attention. The best possible picture of the ground that must be covered should be given by the budget. The various factors should be seen in their true perspective, and attention can be directed to those products which deserve special treatment—those that are excellent profit earners, those subject to keen competition, or those new on the market and requiring extra publicity. Furthermore, a carefully thought out advertising budget sets down certain figures which later can be used as standards for the control and checking of advertising operations.

Co-ordination of Advertising and other Marketing Functions.

In addition to these factors, however, it is invaluable for the advertising manager to be able to consult those officials closely associated with the selling of divisions or groups of products, so that marketing as a whole can be co-ordinated with a

view to presenting a well rounded publicity and selling programme. If no budget is available as a guide, such matters often receive very casual attention, and it is not to be expected that all factors can be treated with the same thoroughness throughout. The advertising appropriation is often for a very large sum, and if the amount was being spent in the factory all sorts of precautions would be taken to see that the utmost efficiency was obtained.

Objections to Advertising Appropriation.

It is sometimes urged that because of difficulties of competition, no appropriation should be made, and the advertising should be controlled according to the state of trade and the activity of competitors. These factors are not inconsistent with budgeting. In the first place, they do not prevent an appropriation being made in respect to those media which are not really affected by such matters. Furthermore, by keeping the budgetary figures in general terms, and concentrating upon much shorter periods as far as the details are concerned, good results are generally obtained. Thus, though the budgetary period is six months, the advertising appropriation could be fixed in total for that period, but details relating to media and products could be confined to monthly figures, or, if necessary, to even lesser intervals. All figures should, however, be estimated as carefully as possible so that the budget may have a real guiding influence.

A further method meeting the difficulty of specifying the exact amount, can be found in the provision of a number of estimates, after the style of the Multiple Budget. Thus an advertising programme worked out to cover various appropriation amounts may enable control to be exercised no matter what amount is finally decided upon.

3. Packing, Shipping and Transportation Budget.

This budget is often comprised of the following—

1. Warehouse costs.
2. Packing costs.
3. Transportation, shipping and delivery expenses.

These may be budgeted in any one of four ways—

1. As part of marketing expense.
2. As part of manufacturing expense.
3. As partly manufacturing and partly marketing.
4. Separately.

Which of these methods is the best to adopt depends upon the conditions operating in the business itself. The accounting

practice is usually one of the main considerations in specifying the best treatment. There are obvious advantages in having the packing and shipping expense budget follow the same grouping as the accounts. However, there is a general lack of uniformity in its treatment. Frequently the attitude is adopted that the shipping of goods is a separate function of the business, and this therefore involves a separate segregation of the expense. In practice, the method of treatment largely depends upon the importance of these expenses and the volume they reach. Where this is likely to be large, they are treated as a separate function. The advocates of this method point out that goods may be manufactured without incurring any shipping (or sometimes packing) expenses, and, likewise, they can be sold irrespective of such expense.

1. *Warehouse Expenses.*

These comprise all labour costs in and around the warehouse, repairs and maintenance of the warehouse and its equipment, and all general expenses (such as rent, caretaking, lighting, heating and insurance) in connection therewith. A study of past costs should quickly yield reliable data on which to estimate the expected charges for the period covered by the budget. It would, of course, be necessary to take into account any changed conditions or special circumstances (such as expected increases in stocks) which would materially alter past results. If it was desired to set down certain standards for closer control this could be done. These expenses resolve themselves into (1) investment, and (2) storage. In the case of the former, it is often possible to apportion these to the various products by using as a unit a proportionate inventory value basis. The storage expenses could be allocated on the proportion of warehouse space occupied, where any such allocations become necessary.

2. *Packing Costs.*

Whilst past results would again be the principal guide in arriving at the estimated future expenses, more notice would in this case have to be taken of the effect which alterations in the expected sales would make as compared with those of previous periods. For example, some products may require packing and others may not. Though a sales increase of only 5 per cent in total may have been allowed for, actually products requiring packing may have been shown at 20 per cent above the previous figures and therefore a larger appropriation for packing expenses would be necessary. The provision of standards for packing is a somewhat difficult matter. Sometimes it is a question of weight and occasionally of bulk, but it generally resolves itself into the number of units moved. This is especially so in pack-

aged merchandise. It will be conceded that generally time consumed is a more important matter than energy consumed. It therefore becomes necessary to arrive at a "standard handling unit" in calculating the budget amount. For example, a unit could be a case of merchandise small enough to be handled by one man, and ordinarily shipped without repacking. Those commodities packed in different ways, and requiring perhaps unusual handling can be referred to this standard unit by means of ratios. Where necessary sample time studies can be used to ascertain the ratios.

In arriving at the units for warehouse and packing costs the following information would be essential—

1. A satisfactory figure for the average inventory investment.
2. The amount of floor space for each commodity.
3. The average time consumed in various handling operations, and the basis for determining the ratios necessary for converting various containers into standard handling units.
4. Frequency of orders covering each commodity, the total sales volume and the number of units sold.
5. A complete statement of all expenses under the various necessary headings.

3. *Transportation Charges.*

These can be divided into the following—

1. Charges representing cartages, freights, postages, etc.—
   (a) which are not included in the ordinary selling price and are therefore added to the invoice
   (b) which are included in the ordinary selling price and are therefore not added to the invoice.
2. Charges on incoming goods—
   (a) which have to be added to the cost of such to arrive at the "in store" cost of the goods.
   (b) which are included in the invoice cost of the goods, and which, if paid by the company, must be deducted from the invoice cost.
3. Charges representing transportation costs directly or indirectly applicable to an expense account.

Estimates must be made of the above divisions. If reliable data covering past results and the proportions which expenses bore over previous years to total sales (and perhaps to total territorial sales or product group sales) and to total purchases

is available, the preparation of the figures will not occasion much difficulty. It is generally possible to estimate these expenses very closely. (See Figure No. 20.)

Responsibility for Expenses.

At times such expenses as have been described (warehouse, packing and transportation) are not under the direct control of the sales manager. They may still be included in the Marketing Expense Budget, but control may be exercised in relation to them separately, whilst at other times they may form a distinct budget. The exact method of treatment is largely immaterial, as long as responsibility for preparation and performance is definitely fixed.

Conclusion.

As has been mentioned previously, marketing costs are receiving more and more attention, but it is remarkable that the advance in this direction has not come sooner. In the past few organisations have seen fit to direct marketing expense with the care and attention lavished on all the productive activities of the business. However, the position is now being forced, be-

FIGURE No. 20.

WAREHOUSE AND SHIPPING BUDGET.

	Total		January		February		March	
	Budget	Actual	Budget	Actual	Budget	Actual	Budget	Actual
Building Maintenance ..								
Rates & Taxes								
Insurance ..								
Depreciation .								
Wages								
Delivery Expenses ..								
Delivery Wages								
Freights ..								
Cartages . ..								
Shipping Charges ..								

cause marketing expense is beginning to reach greater proportions than ever before. The rising tide of this outlay is demanding the attention of executives and is leading directly to the establishment of methods of control and computation of efficiencies. There is a growing realisation of the meaning behind the question, "What does it profit a business, if what it gains in the factory, it loses in the sales department?" The budget offers excellent possibilities for keeping check on marketing expenses and making money spent in this manner show maximum results.

Chapter IV

MANUFACTURING BUDGETS

Differences in factory operating conditions—aims of the manufacturing budgets—the production budget—methods of planning—essential knowledge—variations in production planning—aims of the production budget—steps in preparation—responsibility for production budget—the materials budget—factors in control—objects—value of costing systems—use of group ratios—materials to be budgeted—budget preparation—classes of materials—steps in completing estimates—responsibility—stores and materials expense budget—the purchase budget—desirable material deliveries—limiting factors—requisite information—aims—budget and purchasing procedure—preparation—budget period—responsibility—purchase expense budget—the labour budget—interpretation—purpose—effective control of labour—ascertaining labour required—methods of estimating—keeping employment even—value of the labour budget—relationship between labour and payroll budgets—desirable procedure—three other budgets—occupational—welfare—staff—the labour budget period—the use of ratios—plant and equipment budget—objects—importance—causes of machine replacement and expansion—the desirable amount of plant—preparation considerations—authorisation of projects—responsibility—repairs and maintenance budget—cost variations between periods—basis of preparation—responsibility—purposes—preparation—repairs effected by the factory—repairs not included in the budget—manufacturing expense budget—classification of manufacturing expenses—methods of allocation—difficulties in preparation—methods of preparation—budgets affected by manufacturing expenses—flexibility of estimates.

Once the Sales Budget has been completed, either in total or up to a certain appropriate stage, a copy is sent to the factory manager or to the executive in charge of factory operations, who will break down the quantities of the different products which the sales department expects to sell, into terms of raw materials required, and the manufacturing processes to be performed upon them. Manufacturing processes, in turn, will be analysed into hand labour requirements and machine operations or processes. In order to judge whether a factory is in a position to deliver the goods called for, it is necessary that a com-

plete statement of the production capacities of the various departments of the factory should have been prepared. It will then be possible to compare the goods called for by the sales budget, as far as the manufacturing processes involved in producing these goods are concerned, with the productive capacity of the various departments, machines and men at the disposal of the factory. This will also show whether the proposed sales programme utilises the productive capacities of the plant satisfactorily or otherwise. If the factory managers find that they can turn out the products called for with their present equipment of men and machines, they will probably approve the sales budget without change. If, on the other hand, the sales budget involves additional machines or the employment of additional labour, the factory management must prepare a statement on the subject, with recommendations as to the advisability or otherwise of the extensions. Should the general management then decide to carry out the sales budget, instructions to that effect should include authorisations to the production department covering the expenditure necessary for the extensions described. The factory management should always call attention to any production facilities which would be left idle after manufacturing all products called for by the sales budget.

The translation of the sales forecast into a production programme necessitates the following factors being taken into consideration—

1. The present inventory position and the desired one.
2. The most efficient methods of production and the adequacy of all necessary facilities for such.
3. The most efficient quantity programme, worked out from the standpoint of economical lots.
4. The length of time required to manufacture various products.
5. The necessities for levelling production and the best methods by which this can be achieved.

It will be gathered from the foregoing therefore that Manufacturing Budgets generally include the following—

1. Production Budget.
2. Materials Budget.
3. Purchases Budget.
4. Labour Budget (and Payroll Budget).
5. Plant and Equipment Budget.
6. Repairs and Maintenance Budget.
7. Manufacturing Expense Budget.

Whereas in the case of the sales budget and the marketing expense budget the procedure is, in principle at all events, some-

what uniform, the plans followed in the case of the manufacturing budgets very largely depend upon the circumstances of the particular business involved. Manufacturing operations can differ so widely that it cannot be expected that one method of procedure can be taken as a standard. In addition to fundamental differences in factory production, there are also other matters which must necessarily have a strong influence upon the methods to be followed. Where a costing system is already in operation, this will be of the greatest help in arriving at the various essential unit costs for completing the budgetary estimates. A standard cost system is of even greater help and largely ensures the success of the budget, as a maximum amount of control and a scientific approach to the predetermination of results become possible.

Differences in Factory Operating Conditions.

The method to be followed in the preparation of the manufacturing budgets, then, depends upon the conditions operating. From the budgeting standpoint, a preliminary grouping of organisations would be—

1. Those which have a standard costing system in operation.
2. Those which have accurate costing systems, not of a standard costing type.
3. Those whose cost finding is primitive or non-existent.

A further division, however, can be made—

1. Where a product of simple nature and comprising one or a few parts only is manufactured.
2. Where a single product is made, but of complex design, and involving a large number of parts.
3. Where a large number of products of either simple or complex design, but of stock pattern, are made.
4. Where products are manufactured to special design, as in the case of special orders.

Here, again, the fundamental differences between these various types of manufacturing concerns are such as to warrant different treatment.

Aims of the Manufacturing Budgets.

No matter what differences there may be in relation to the manufacturing programme, however, the aims of the manufacturing budget are—

1. To co-ordinate production (and its inclusive operaations) with the sales estimate.

2. To harmonise each and all phases of the productive processes.
3. To plan the various functions, which are part of productive performance—viz. materials, purchases, maintenance, equipment, labour, expense.
4. To analyse the various operations which together total the factory cost in relation to each unit, groups of units, product or groups of products, included in the sales estimate.
5. To provide plans and estimates which can be considered in terms of efficiency for the purpose of lowering costs, or increasing production, or making some improvement in the general factory operations.
6. To use the budget as a controlling device so that the plans as set forth materialise, or, alternatively, that factory performance and costs can be modified or extended in terms of sales and made to preserve the utmost co-ordination with them.

1. Co-ordination with Sales.

It is, of course, useless for the sales department to prepare, even with the greatest care, sales estimates which involve a production programme which cannot possibly or economically be carried out by the factory. It is essential that the sales budget be practicable from a production standpoint. While this may not present many difficulties, there are degrees of co-ordination, and in the interest of the business as a whole, a result should be aimed at which will give the greatest efficiency in the factory, as well as in the sales department. This will probably necessitate the closest collaboration between the sales and production managers, and this consultation usually takes place just prior to the finalisation of the selling estimates. Such measures are necessary to avoid producing some items at an above capacity production rate, and others in comparatively small quantities. Even after agreement has been reached, further adjustments may be necessary when the production of the various units is more closely examined. With co-operation between the departments, sales estimates representing the best plans for both selling and production can finally be adopted.

2. Co-ordination within Processes.

Not only must sales estimates be capable of factory performance, but manufacturing operations must also represent a balanced programme. Overworking certain portions of the plant while others remain slack does not tend towards efficiency. Most success will come from the maximum working of all sec-

tions of the factory and, of course, the nearer each of these sections can come to capacity volume the better the results. The success possible in these matters can only be determined by breaking up the various units, groups of units, products, or groups of products into the factory operations necessary, following them through in logical sequence, and judging whether the flow of work is smooth and free throughout.

3. Functional Planning.

Before a production budget setting out in precise terms the production programme and policy to be followed over the budgetary period can be prepared, a thorough examination of the volumes of the various products that it is desired to manufacture is necessary. Especially in seasonal products, sales of equal volume are not made each month throughout the year; indeed, in some businesses products are sold only for two or three months of each year. The maker of agricultural machinery is an example. At one period of the year ploughs and harrows are being sold, and at another binders and harvesting machinery. Where the budget shows that it is expected that 5000 harvesters will be sold in three months of the year, it may be foolish to arrange the production programme so that 420 machines are produced each month of the year. If this was done, by the end of the selling year, so far as these machines are concerned, perhaps only 4200 machines would have been produced. Instead, it may be arranged to have at least 4500 machines available by the first of the selling months, leaving a further 500 machines to be produced as soon as possible afterwards. There are two important factors which guide this policy—

1. The ideal method would be to arrange the production programme in such a way that the finished article would be completed in the safest minimum time before its actual sale. Some motor car manufacturers in U.S.A. have arrived at excellent standards in this connection, motor cars being cleared through the sales department practically as they come off the factory floor and testing ground. Unfortunately, for the average manufacturer this standard of perfection is not possible. Bearing in mind, however, the cost of carrying inventories (estimated as ranging up to 20 per cent), the matter is extremely important and over the recent depression many companies were able to effect great improvements, and incidentally large savings, by the wise reduction of stocks in hand.

2. While the foregoing is theoretically perfect policy, there are other factors often making it advisable, from a practical standpoint, to alter the arrangements. Experience has taught that more efficiency and better results are obtained by employ-

ing a normal staff to capacity, or almost to capacity, over a longer period of time than by working extra shifts at over capacity rates for a short time. The reason is, of course, because the workmen are more efficient (largely because they are more contented) when they are engaged on the same work over a period, and their work is generally of a much higher quality than that of employees (often recruited somewhat haphazardly and frequently with limited experience of the particular job they have to do) who are engaged to push through production. It is generally found advisable therefore to control production in such a way as will result in the employment of permanent labour for as long a period as possible, providing that capacity or near capacity output is obtained. The wisest procedure seems to be a compromise between the inventory position and the labour position.

None of these questions can be solved until the capacity of the plant in relation to the various operations, and the amount of production it is necessary to undertake, are known and division is made into estimated monthly sales. From the resultant figures the advisability or otherwise of evening up production can be gauged.

When the total products to be manufactured each month are known the next step is to break these down into—

(a) Raw materials.
(b) Production operations.

From the first it is possible to compute the amount required for productive purposes each month. This material must, of course, be on hand when the relevant productive process is commenced. Similarly, necessary stocks of other materials used in the manufacturing process must also be available. These factors are covered by the materials budget, the purpose of which is to plan the procurement of all materials required to process the product, whether these are portion of the final product or are in the nature of auxiliary supplies.

When the various operations are analysed it is possible to follow the routing of the product from the raw material stage to the finished article. In process the unit may pass through several departments and through various machines. Reference has already been made to the necessity of seeing that the productive processes are so co-ordinated that no machine is so much in demand as to interfere with the normal flow of work. Where this condition cannot be arranged it may be necessary to purchase new equipment. This may be a better solution than attempting to alter the selling programme, but in any case normal growth will indicate the logical step. The operations to be performed by the various machines in relation to each product

would be known and therefore the total operations for all products could also be ascertained. By past experience, or where necessary (as in the case of a new product) by actual test, the estimated working time which will be spent by each machine upon the total production can be calculated. The operating capacity of a machine may be 180 hours per month. If it is found that, in order to process the goods appearing in the sales budget, the machine will have to work 240 hours, then obviously portion of the work will have to be performed by another machine, an extra shift will have to be put on, the sales estimates will have to be amended, or another machine will have to be purchased, either in support of or to replace the present equipment. The analysis of all processes will soon determine what additional machinery is likely to be required during the budgetary period, and when these machines must be ready for operation. This information is moulded into the Plant and Equipment Budget, which sets forth the programme to be followed.

An allied problem to the plant and equipment question is that of space, the two generally being considered together. The installation of new machines may reveal difficulties in relation to space. Machines should not be placed wherever they can be accommodated, installation being made as far as is practicable in the precise spot which is best fitted, or most nearly so, to facilitate the efficient flow of work.

In addition to other factors, the maintenance of machines, which in certain plants is a large item, requires attention. This is covered by the Repairs and Maintenance Budget, which results from a recording of the estimated costs to keep the machines in efficient working order over the budgetary period.

Fluctuations in employment are much more common and much more serious in some plants than others, and the necessity for a Labour Budget is therefore much greater in certain cases. Usually this budget confines itself to the planning of the workmen necessary for carrying out production plans. In such a case both direct and indirect charges are planned in terms of money as well as numbers and sometimes in conjunction with a Labour Budget a Payroll Budget is prepared, specifying the amount of wages which will have to be paid throughout the various periods. Sometimes the total wages expended are calculated through costs of processes in the factory. For example, in the case of standard costs, the costing of operations would include labour charges, and it would therefore not be necessary to take into account the amount of total factory wages, except for inclusion in the Financial Budget.

4. Analysing and Costing Productive Processes.

Where no costing results have been obtained in the past, it is necessary, having broken down the products into materials and operations, to estimate the cost of the raw materials necessary to manufacture the products, then to arrive at the total amount of factory costs, both direct and indirect, likely to be incurred. For example, it may be found that in order to process 1000 units during one month, raw material costing £500 would have to be purchased. The total amount of labour, both direct and indirect, which would be involved may be estimated at £350. The other expenses, such as depreciation, rent, lighting, heating, etc., would be taken singly and the amount of expense in each case judged as closely as possible. When all factory expenses are covered in this manner, the addition of all totals would give the complete factory cost. This figure would then be the starting point in arriving at subsequent costs, such as the cost to make and sell, total costs, etc.

Where a costing system (other than standard costs) is in operation, the amount of materials involved would be obtained in the same way as previous costs have been calculated. Factory costs, however, may be obtained either through total departmental costs, calculated according to complete departmental processes and including direct labour costs, or the totals of all operating costs, calculated through machine rates, arrived at by any of the usual methods. Indirect factory expenses would then be estimated through an examination of the incidence of such costs or the allowance, based on past records, of a percentage on such a factor as direct labour hours or direct labour cost.

In the case of standard costing systems, the total costs of factory operations necessary to process the total products would be gauged by an analysis of past results, altered where necessary to take into account the different conditions likely to be experienced over the budgetary period. Accurate results can be obtained in such cases for standard costs are a great aid in budgeting.

The foregoing is designed to show the methods to be adopted in arriving at the figure which will represent the factory cost of commodities processed. In most cases a single product has been used, and it is assumed that this is manufactured for stock. It has already been mentioned that businesses are distinguished according to volume, complexity and special conditions operating therein. Where a number of products are manufactured, the procedure outlined is complicated only to the extent of increasing the work to be done. It would be necessary to take each product, or group of products, and examine it or them in the manner already described. The routing of

work would be somewhat more difficult, and closer attention would be necessary to the times machines would be operating, but the procedure in general would be the same.

5. Increasing Efficiency.

Throughout the various analyses and investigations, every possible efficiency should be aimed at. Opportunities for making savings are much more apparent in planning budgetary figures than while operations are in process. It is always much easier to accept inefficiency after it has shown itself than to authorise inefficiency for the future. Care and attention at the outset seldom fail to show savings and this is one of the major advantages of budgetary preparation.

6. Control.

Results obtained from the foregoing procedures are recorded through the various budgetary estimates and these together form a plan of factory organisation and production which acts as a guide or chart for the period covered. It is true that the estimated figures are almost certain to differ from actual results, but the presence of budgetary statements covering factory operations makes the alterations necessary possible in a logical and business-like manner. The factory or production budget is the first step in budgetary control in the factory.

THE PRODUCTION BUDGET

Methods of Planning.

There are four main essentials to be covered in production planning—

1. *What* work shall be done.
2. *How* the work shall be done.
3. *Where* the work shall be done.
4. *When* the work shall be done.

The planning may be done in one of two ways—

1. *Empirically.*

A highly experienced man will be able to plan a desirable operation schedule because of his knowledge of general productive processes, but he cannot proceed further than that knowledge will take him. He would largely work independently of data, and therefore his conclusions must, of necessity, be approximate, even though a large degree of accuracy may at times be obtained because of his experience.

2 *Statistically.*

Where planning is carried out by means of a thorough examination and analysis of data, a much greater degree of accur-

acy is likely. The engineering and drafting departments are excellent examples. A certain portion of the planning work will probably always be empirical, but it is suggested that a scientific approach to the production problems will necessitate a full study of statistical data available.

Essential Knowledge.

In order to complete the estimates for the production budget, the following information should be obtained—

1. *The type of industry and its productive aims.*

Obviously no planning of productive processes could be carried out without this knowledge. Different industries carry out the manufacturing or productive operations in different ways. The output of raw material in the case of the extractive industries would be quite different from the processes of the manufacturing organisations. Similarly, there would be many differences between industries and to a lesser degree variations in the same industry.

2. *The length of time required to make the various products.*

This factor often determines the length of the production budgetary period. Whilst it is always desirable that all the manufacturing budgets should cover the same period, it is found also that short-term budgets are often also prepared to cover production. Thus a six months' production budget may be supplemented by the preparation of six one-monthly estimates.

3. *The present position of and the proposals in relation to inventories.*

The state of inventories must guide productive operations. Where it is desired to increase manufactured stocks, the production programme must cater for this increase as well as for expected sales. Similarly, in the case of heavy stocks of manufactured products, the programme must be eased to reduce inventories.

4. *The necessity or desirability of levelling production.*

This is generally done through the manufacture of extra stock during dull periods or by maintaining a balanced programme. The advantages of continuous employment of workmen are well known, and frequently it is desirable to spread production evenly over a period rather than allow seasonal influences to play too large a part.

5. *The alteration or combination of processes.*

This is sometimes desirable to facilitate the flow of work or to promote extra efficiency or greater economy. It is a matter largely for the works manager or engineer, though the various

foremen can sometimes be of great help in such matters. Full information regarding proposed alterations is always necessary for budget preparation, so that productive planning can cater for such.

6. *The economical lot processes.*

On the grounds of greater economy, and very often from the standpoint of expediency, it is essential that some knowledge of the most economical lots to process should be obtained. This matter has frequently to be considered in conjunction with the materials budget preparation.

7. *The availability and adequacy of production facilities.*

This would not only include usual plant and equipment, but also the necessary conveying and transportation facilities. No systematic planning could be completed without taking such factors into account. It would be foolish to plan a programme which too greatly over-taxes the necessary plant. Similarly, where the capacity of one machine is so over-loaded as to suggest that there will be a breakdown and delays, there may be every possibility of serious falling down in the entire manufacturing operations. In addition, the degree of standardisation in equipment operations and products will also seriously affect the production plan, and must therefore be taken into account in preparing a production budget.

Variations in Production Planning.

The amount of detail which is included in a production budget varies considerably. In some cases there is merely an attempt to arrive at quantities to be produced, e.g. a production programme of 25,000 tyres may be desired. This would represent the planning of what work was to be carried out. Further consideration of such matters as routing of work, scheduling, inspecting and despatching may be left until the issue of necessary production orders. It is, however, generally desirable that these other factors shall also be planned when the budget is being prepared—how the work is to be done, and when and where. Some organisations examine the various matters in the greatest detail. For example, it has been suggested that the technique of planning should cover—

1. *Parts of Material.*

Kind, quantity, quality and availability. To obtain this information it would be necessary to analyse the product into components and units, to investigate stock balances and time necessary for delivery.

2. *Methods of Operation.*

Economical and efficient sequences of operations for each

unit of product, machines required, time allowances for each operation, listing of auxiliary equipment, tools, jigs and fixtures.

3. *Machine and Labour Requirements.*

Hourly work units of each machine for each process and labour requirements for each department or process. Information would be obtained from past technical experience supplemented where necessary by time studies.

4. *Formulation of Programme.*

Full sequence of operations set down with dates and times against each process.

Much will depend upon the type of production of the particular enterprise. Thus, in a continuous process industry, the raw material often enters the factory at one end and flows through it emerging at the other. Here production control is made relatively simple, because the material follows a natural sequence of processes and times are largely controlled by the capacities of the machines. In the case of special order industries, where products are made only upon customers' specifications, there is generally restricted automatic movement, and the closest attention to and supervision of processes is required. Where production takes the form of manufacturing in batches, the exact methods of routing would probably depend upon whether batches are few in number and often repeated, or whether they conform to the special order type by being seldom repeated. The production budget must, of course, take into account productive processes most suitable to the particular type of industry. Other factors which operate to make the planning functions simple or complex would be—

1. The amount of repetition work
2. The number of processes and operations in each part and parts in each product.
3. Fixed or variable capacities of machines.
4. The number of sub-assemblies.

The Aims of the Production Budget.

These can be set down as under—

1. To bring to a common focus all the factors necessary to establish policies and to determine operations.
2. To project these established policies into the future by an analysis of past performances.
3. To plan and to control the operations resulting from carrying out the policies decided upon.
4. To make provision for materials to be on hand when and where needed.

5. To plan the sequence of operations necessary for economical production.
6. To co-ordinate the single efforts of the factory so that each represents a step in a completely profitable programme.

Steps in the Preparation of the Production Budget.

The steps in the preparation of the budget are—

1. *Production Analysis.*

This consists of breaking down the production into its ultimate parts or components, and gives the following information—

(a) What parts must be produced, and how many go to each finished product.
(b) How many parts are combined in sub-assemblies.
(c) Full details of raw materials included in each part and also in turning the sub-assemblies into the final assembly.

The materials necessary for processing are listed, and are later used in connection with the materials and purchases budgets.

The following decisions should already have been made—

1. The best method of making each part.
2. The best methods of processing the parts.
3. The question of the necessity for definite sequence of operations.
4. A statement of jigs, fixtures and tools which will be necessary
5. The routing of work from the first to the last operation.
6. The most economical lot programme.
7. The sufficiency of existing plant.

2. *Scheduling.*

This consists of fitting the various processes into a general timetable, to permit orders to be manufactured according to requirements based upon the selling estimates. It is most important that the utmost care be given to this matter, as delays in deliveries can be serious. especially where there are contractual liabilities. It is usual, therefore, to employ operation control charts, the most common one being the Gantt Progress Chart, which shows the desired operation results and enables the actual to be checked immediately against the budgeted.

3. *Despatching.*

This covers the movement of the material and stores from their first depository to their first process and thereafter from one process to another. Included also is the issuing of tools

through Tool Orders, so that all such aids to production are available before they are actually required. It would also cover the procedure necessary for the issuing of Job Orders, which authorise operations in the manner and according to the time previously planned, and also the issuing of all work orders, instructions and drawings. The beginning and completion of jobs and such matters as Idle Time are also covered.

4. *Inspection.*

This is designed to exercise control over the quality of the product, to prevent further work on spoiled parts; to see that payment is made only for satisfactory work; to find and locate faults in machines; and to maintain a satisfactory standard of accuracy.

An excellent method of arriving at production budget figures is to be found in Figure No. 21, which covers the production of tobacco. Other forms are shown in Figures 22 and 23

The method of production budgeting carried out in the Dunlop Rubber Co. Ltd of Great Britain is given in the following quotation from an address by A. Healy (Works Director) as reported in the proceedings of the Sixth International Conference for Scientific Management (1935)—

"Planning is done in a central department for the whole groups of the producing departments. The chief planner reports to the production superintendent direct, but he forms the link between the production departments and the sales departments, between the production departments and the purchasing department and the technical departments on all matters affecting planning.

The chief planner has an assistant in each unit of the factory, who plans the work in that particular unit in co-operation with its manager. Active and friendly co-operation is essential for the success of the system. The foremen in the production units are therefore instructed as to what work they must produce, and they confine their attention to producing it. Without a central planning organisation, it is found that a foreman may spend as much as 75 per cent of his time arranging his work, and providing for the necessary supplies of materials that he requires. Under the central planning system, it is quite true that he may have to spend a little time in co-operation with the planning department representative, but he certainly has at least 90 per cent of his time for training of labour, supervisions, inspection of product.

The planning methods used when manufacturing for stock from which orders are met are different from job order production systems, and some of the working details of the actual planning procedure in use may be of general interest—

(a) *Manufacturing for stock—Production Control.*

A yearly forecast or budget is prepared for twelve months ahead. In this budget the home and export sales estimated are combined into one load on the factory. Separate considerations are given to tyres for original equipment on motor cars, replacement sales estimates, seasonal variations and stock data for individual sizes. The budget is next split into four quarterly estimates, and then further broken down to monthly and weekly figures. Care is taken to avoid large-scale variations in demand on the factory and at the same time to regulate stocks as required for sales made.

This budget is then analysed in various ways so as to secure prevision on the following problems—

Major Plant or Fixed Equipment—Mills, Calenders, Extruders, Tyre-building Machines; Vulcanising Plant.

Minor Plant or Mobile Equipment—Moulds; Formers, Curing Bag Plant, Bead-setting Rings; Tables; Racks.

Working Conditions—Hours of work; method of arranging shifts; use of existing plant to most economical advantage; labour required.

Raw Material Estimates—Rubber Tyre fabric; various ingredients, viz. carbon black.

Time is thus given to ascertain if the programme can be accomplished with existing facilities, and, if not, what action is to be taken, and also time to develop material estimates for forward purchasing of bulk raw materials and purchasable components.

The yearly forecast is revised every three months, based on most recent information on hand concerning sales. From the totals set out in the budget, together with a review of the recent sales situation, a monthly schedule embodying details of sizes and types is prepared two weeks ahead of date of commencement. Detailed material requisitioning is controlled by this monthly schedule; for most items three to four weeks cover only is allowed, to ensure rapid material turnover.

The next step is the weekly programme. On Wednesday the details are decided for the forthcoming week, during a planning meeting, at which are present representatives from the sales, engineering, technical departments. Problems relating to plant available, working hours and conditions are settled so that the final weekly programme schedules only what it is possible to produce. New products or design modifications are normally included in the weekly programme as and when plant and materials are available.

FIGURE No. 21.

PRODUCTION REQUIREMENTS SCHEDULE (IN PRODUCTS).

Product	July Budget	July Actual	July Difference	August Budget	August Actual
"Guinea"					
Expected Sales .	6900 lbs.	7269 lbs.	369	7700 lbs.	7700 lbs.
Stock on Hand at 1st	10,350	10,350		11,550	11,541
Change in Stock Required . ..	1200			1200	1200
Production Reqd.	8100	8460	360	8900	8900
Max. Normal Production (475 lbs. per day) ..	9975			10,925	
Percentage—Prod. Req. to Normal	81%			81½%	
Adjusted Prod. Quota	8100			8900	8900
Percentage to Normal	81%			81½%	81½%
"Loyalty"					
Expected Sales .	5100	5168	68	5300	5300
Stock on Hand at 1st	7600	7600		7900	8132
Change in Stock Required . ..	300	300		100	
Production Reqd.	5400	5700	300	5400	5300
Max. Normal Production (350 lbs. per day) . ..	7350			8050	
Percentage—Prod. Req. to Normal	73½%			67%	
Adjusted Prod. Quota	5400			5400	5300
Percentage to Normal	73½%			67%	66%
"Crown"					
Expected Sales .	10,000	10,905	905	10,200	10,200
Stock on Hand at 1st	15,000	15,000		15,300	14,600
Change in Stock Required . ..	300			450	1000
Production Reqd.	10,300	10,505	205	10,650	11,200
Max. Normal Production (560 lbs. per day) ..	11,760			12,880	12,880
Percentage—Prod. Req. to Normal	87½%			82½%	87%
Adjusted Prod. Quota	10,300			10,650	11,200
Percentage to Normal	87½%			82½%	87%
"National"					
Expected Sales	48,000	45,092	2908	51,600	51,600
Stock on Hand at 1st	60,000	60,000		64,500	65,520

FIGURE NO. 21.—*Continued.*

Product	July Budget	July Actual	July Difference	August Budget	August Actual
"National"—contd.					
Change in Stock Required . ..	4500			250	**1000**
Production Reqd.	52,500	50,612	**1888**	51,850	50,600
Max. Normal Production (2500 lbs. per day) ..	52,500			57,500	57,500
Percentage—Prod. Req. to Normal	100%			90%	88%
Adjusted Prod. Quota	52,500			51,850	50,600
Percentage to Normal	100%			90%	88%
Summary					
Expected Sales .	70,000	68,434	**1566**	74,800	74,800
Stock on Hand at 1st	92,950	92,950		99,250	99,793
Change in Stock Required . ..	6300			2000	1200
Production Reqd.	76,300	75,277	**1023**	76,800	76,000
Max. Normal Production	81,585			89,355	89,355
Percentage—Prod. Req. to Normal	93½%			86%	85%
Adjusted Prod. Quota	76,300	75,277		76,800	76,000
Percentage to Normal	93½%	92%		86%	85%

Figures in heavy black type indicate budget greater than actual.

From the weekly programme the section planning men, who work in the shops, prepare daily schedules for the production of necessary materials and components. In tyre manufacture daily schedules are needed to control supplies of rubbered fabric, compounded rubber, treads, cut plies, assembled chafers, breakers, curing bags, so that tyre building and curing operations can proceed as programmed. In these day or shift programmes, consideration is given to piece-work rate conditions, as to lots or runs, individual capacity of machines or men, most economical lot to process from material spoilage standpoint, and to correction of out of balance of partly processed materials or components. The section planning men, being on the spot, can check progress and report irregularities or delays at once.

Processing changes, on which quick action is usually necessary, are taken care of in the daily programme of work to be done."

FIGURE No. 22.

PRODUCTION BUDGET.

Products	Estimated Working Hours	Estimated Quantities Produced	Actual Working Hours	Actual Quantities Produced	Gain or Loss in Working Hours	Gain or Loss in Quantity Produced	Budget Hourly Rate	Actual Hourly Rate
Product No. 41								
" " 42								
" " 43								
" " 44								

FIGURE No. 23.

PRODUCTION BUDGET.

Date	Article	In Production	Unfilled Orders	Available for New Business	Average Monthly Sales 12 Months	Last Month's Sales	Estimated Three Months	Additional Stock Authorised

Responsibility for Production Budget.

Depending upon each particular organisation, the production budget may be prepared by—

(a) The Works Manager.
(b) The Works Engineer.
(c) The Production Manager.
(d) The Planning Department.

When it is completed, the budget would be submitted to the executive in charge of factory operations for approval, where he himself has not prepared it. It would then in due course be submitted to the Budget Committee.

Mention has already been made of the necessity for the closest co-operation with and co-ordination between those controlling production, materials and purchasing.

THE MATERIALS BUDGET

An analysis of productive operations will not only yield information concerning the various operating sequences, but also of the materials which are treated in the course of manufacture. It is possible, therefore, through a study of the whole of the products included in the production budget, to arrive at the totals of all raw materials which will be required to complete the manufacturing programme. These include the direct materials forming the completed product and also indirect materials required for such purposes as cleaning, repairing, recording, etc. Sometimes separate budgets are made for direct and indirect materials, the latter being calculated as expenses and finding their way into one of the expense budgets.

Factors in Materials Control.

The following factors must be taken into account before proceeding with materials control—

1. The methods for determining what material will be wanted.
2. The determination of what quantities will be required.
3. The time when such materials will be necessary.
4. The decision whether the materials will be purchased or manufactured.
5. The methods for receiving, storing and issuing the materials

It is the function of the budget to promote the efficient accomplishment of these factors.

Objects of Materials Budget.

The objects of a materials budget can therefore be said to be—

1. To give information regarding the stock position and to allow purchasing to be carried out in such a manner as will serve the best interests of the business.
2. To permit of estimates of the total value of all materials and the disbursements which will have to be catered for, including the time when such disbursements must be made.
3. To arrive at the costs of the various raw materials included in manufacturing so as to facilitate the preparation of the cost and financial statements.
4. To control inventories and keep stocks at minimum safe figures.
5. To provide the purchasing department with data which will be of value in preparing the purchasing programme.

Value of Costing Systems.

Where adequate records of past transactions are available, little difficulty, though possibly much work, will be encountered in arriving at the various totals of raw materials required. A standard cost system will mean that adequate information is already available, and the desired totals can be estimated by taking the quantities of products and allowing the standard materials volumes and costs in relation to each. It will then only be necessary to devote further attention to any raw materials required for new products, and these could be analysed and standard costs prepared in relation to them.

Where job costs have been in use the budgetary information can again be obtained with only little more difficulty than in the case of standard cost systems. Previous cost sheets would show the quantities of raw materials and their values and the subsequent procedure would be similar to that where standard costs are in operation.

Where no previous costing system has been in operation, the position is more difficult, especially where there are large quantities of products to be manufactured. In such cases, it may be found impossible to go through item by item to arrive at totals of the various materials. It is wise, however, to be wary of discarding the detailed method except where it is likely to prove so very difficult or costly as almost to nullify any chance of success. Where few products are manufactured, it would still be advisable to make every effort to ascertain the

quantities of materials (even though past records are not very satisfactory) so that a complete budget can be prepared and subsequent control exercised in full. It has already been pointed out that the value of the various budgets is in direct proportion to their accuracy, and as a last resort only, therefore, should less satisfactory methods of arriving at materials control be pursued.

The Use of Group Ratios.

Occasionally it is possible to estimate very closely the materials likely to be required by the application of a ratio to production. For example, it may be found that past figures have shown very definitely that the value of raw materials in the finished product works out at one half of the labour value content. From this it may be deduced that the figures for the coming year will bear the same proportion, and a commencement towards the preparation of a materials budget may be inaugurated in this way. From the total figure, volumes of various classes of materials may be obtained, also by ratios.

Where it is obviously impossible to estimate all materials so that full control can be exercised, recourse may have to be made to the adoption of a method whereby all the major products, or key-products as they are sometimes called, are estimated individually, and full control exercised over them. The lesser products would then be grouped in some suitable manner with the idea of ultimately exercising control over groups instead of over single products.

It must be recognised that any departure from the usual procedure weakens control and lessens the value of the materials budget. An analysis of raw materials in relation to stocks on hand and manufacturing processes will show materials to be purchased and when the supplies will be needed. The function of the purchasing department is then to procure these materials at the best price, in the best manner, from the best people, with delivery at the best time.

Materials to be Budgeted.

The Materials Budget can be used to cover the following three classes of materials, though generally control is attempted only over the first two—

1. Materials used in and forming part of the finished product.
2. Materials incidental to production.
3. Supplies, such as stationery, etc., for the administrative sections.

Sometimes the first two classes are catered for in one budget and this is sometimes termed the Stores Budget, which is therefore an alternative form of Materials Budget.

Budget Preparation.

Generally the budget is prepared before the beginning of the actual budget period, and this necessitates estimates being made of the opening inventories. As the subsequent operations adopt such estimates as commencing factors, care must be taken in their preparation. The opening figures are usually obtained either from the closing figure of the previous budget, or such figure modified, where necessary, because of current results to date.

Once the detailed information of production requirements is available, the procedure to set up the materials budget is not difficult. The estimated stock on hand of each class of raw materials at the beginning of the budgetary period should be ascertained. An attempt should then be made to evaluate the amount of the commodity desired on hand at the end of the budgetary period, or, preferably, month by month. Obviously the inventory figure at the end of one month will be the commencing figure for the next. The amount required for production can be obtained by an analysis of the various bills of material prepared by the production department. Having the opening stock, the amount required for production, and the amount desired as stock at the end of the month, it is a simple matter to calculate the total purchases for that month. Thus, if on January 1st a business has on hand, or expects to have on hand, 800 tons of pig iron, the closing stock at January 31st is to be no less than 1000 tons, whilst during the month 1400 tons will be required, it is obvious that 1600 tons of pig iron must be delivered during the month. These figures are prepared in relation to each class of raw material, and every effort should be made to keep stocks as low as possible. The degree of success obtainable in such cases depends upon the difficulty or otherwise of obtaining supplies, together with the internal organisation of the business. It must be added, however, that in order to control inventories and to help the purchasing department, maximum and minimum limits should be fixed for at least all the main products and raw materials. The Materials and Purchases Budgets are, of course, closely related, and consideration of one almost always involves consideration of the other.

Classes of Materials.

In order to facilitate the preparation of the budget the materials required are sometimes divided into—

1. Basic raw materials.
2. Other materials used in production.
3. Supplies, auxiliary to production.

Practically every manufacturing business has some raw materials which are of the greatest importance because they comprise what are actually the principal elements in manufacturing the product. The wheat used by the flour miller, iron used by foundries, leather used by boot and shoe manufacturers are all examples of basic raw materials. Generally these are of sufficient importance to warrant executive attention not only to their purchase but to the question of delivery dates. In addition to the foregoing there are also other materials used in manufacturing, such as bags and containers used by the flour miller, other metals by foundries, nails, buttons and clasps by the boot and shoe factory. Quantities of these materials desired also have to be catered for and these are in turn different from auxiliary supplies such as oils, greases, etc.

In some cases each and every individual line of material would be estimated and included in the purchase budget. In other cases all materials would be covered in detail except those relating to auxiliary services, these latter being estimated in total quantities only. In certain cases the third alternative, that of estimating in detail only the basic raw materials, all others being budgeted in total only, would be adopted.

Where materials are budgeted in total only, purchase requirements would be established by means of ratios. These would be arrived at by relating past productive programmes to purchases made.

Steps in Completing Estimates.

The steps in the preparation of this budget can therefore be set down as under—

1. *An estimate is made of the probable requirements during the budgetary period.*

This may be done in total or in detail. In the latter case the material constituents in each product to be manufactured would be listed on a bill of materials and from this, taking into account the quantities of products to be manufactured, the total materials to be used would be arrived at.

2. *The periods over which these materials would be required are set down.*

This information would be arrived at by an examination of the production programme and the total products to be manu-

FIGURE NO. 24.

SIMPLE RAW MATERIALS BUDGET.

Date	Article	Used Last Month	Estimated This Month	On Hand	Ordered

Figure No. 25.

MATERIALS BUDGET.

Product	Specification	Unit	ESTIMATED MONTHLY REQUIREMENTS											
			January		February		March		April		May		June	
			Budget	Amended Budget	Budget	Amended Budget	Budget	Amended Budget	Budget	Amended Budget	Budget	Amended Budget	Budget	Amended Budget

FIGURE No. 26.

MATERIALS EXPENSE BUDGET.

EXPENSES	JANUARY		FEBRUARY		MARCH			
	Allowance for Month	Actual Expense	Allowance for Month	Actual Expense	Allowance for Month	Actual Expense	Over	Under
Supervision Costs								
Labour Costs ..								
Clerical Costs ..								
Supplies								
Maintenance ..								
Rent								

factured. Weekly and monthly material requirements could be gauged in this manner.

3. *The estimates of materials can then be placed in the form of a budget.*

4. *Certain maximum and minimum limits would be provided as a help for the purchasing department, and a guide for subsequent control of material stocks.*

Responsibility for Materials Budget.

The Materials Budget is frequently prepared by the works superintendent or the factory manager, but sometimes it is entrusted to the stores supervisor. There seems to be a desire of late, however, to vest this responsibility in a different officer —the purchasing manager or agent. This is a logical step, and control over both materials and purchasing should facilitate improvements in both spheres.

Specimen materials budgets are shown in Figures 24 and 25.

Stores and Materials Expense Budget.

The costs of handling stores and keeping records are sometimes included in a special estimate completed by the stores supervisor. This is an alternative to treating them as part of Manufacturing Expense. A typical form to cover these estimated expenses is shown in Figure No. 26. The estimates can generally be prepared by reference to previous periods. At times a ratio between stores handled and stores expense is drawn and these figures become useful in preparing future budgets.

THE PURCHASE BUDGET

The Purchase Budget arises out of the Materials Budget. The ascertainment of the totals of commodities necessary to have on hand, and stipulations as to when materials are to be received are only portion of the problem, the other part being setting in motion the necessary machinery to ensure that those desired actually materialise. It is one of the most important duties of the purchasing agent to procure the various supplies so that production can be continuously maintained. If the whole of the duties of the purchasing agent could be covered in this way, the matter would be simple, but there are a number of conditions to be taken into account when the purchasing routine is set in operation. Inventories should be kept as low as possible. Keeping stocks is an expensive process and real economies can be obtained through cutting down any excesses. It is essential, however, not to overdo this factor to such an extent as to endanger production. It is desirable that raw

materials arrive at a factory just when they are about to be used, and though this is an ideal, it has been more or less achieved in certain cases. For example, it is stated that one of the plants of the Chrysler Motor Company in U.S.A. has planned its activities in such a way that parts are moved directly from the unloading platform to the assembly line, without being placed in stock at all.

Desirable Material Deliveries.

In "The New Way to Net Profits," F. W. Shibley gives two instances. A manufacturer of automobile frames has so balanced the receiving of supplies with requirements that sheet steel, from which frames are made, is conveyed direct from the rail truck, through the inspection department, to the hydraulic presses and other machinery in a constant flow, till it emerges a frame, painted and ready for shipment, at the loading station, all within a few hours. The second example is that of a manufacturer of medicated cotton gauze. Several spinning and weaving mills are situated in the south of U.S.A., and a bleaching and finishing plant in New England. The production schedule is planned so accurately that shipments of woven fabric arrive at the finishing mill on the day on which they are required. Small minimum inventories of the fabric are always maintained at the latter mill, but this is only sufficient in amount to provide for accidents and unforeseen delays.

Limiting Factors.

While this is a desirable condition of affairs, there are many matters which generally complicate the procedure—

1. It is possible that the cost of carrying goods in stock may be outweighed by price advantages to be gained by the purchase of larger quantities. In other words, those quantities which would be best suited to the idea of minimum stocks are not economically sized buying lots.
2. Favourable prices may be realised through long-term contracts which may involve special delivery problems.
3. Certain materials may only be available at certain times and, because of, say, weather conditions, it may be necessary to buy a year's raw materials during a period of three or four months each year. The purchase of wool is an example. Here the total yearly requirements are generally purchased over the comparatively short period covered by the wool sales.

4. The productive process involved in the manufacture of the raw materials required may cover an extremely long period, and what is more, may be carried out only at irregular intervals, thus necessitating purchases as the stocks become available.
5. Where the materials have to be imported, a considerable time may elapse from the date of ordering until the goods are actually on hand, and conditions such as these may make it imperative that larger stocks be kept on hand as a precautionary measure.

It is the duty of the purchasing agent to take the whole of these matters into consideration in an endeavour to keep stocks at the lowest possible figure consistent with efficiency, but, above all, remembering that the most essential factor is to keep the manufacturing activities running smoothly.

Requisite Information.

The task of the purchasing department is, therefore, to have on hand the required goods necessary to ensure uninterrupted production of a satisfactory product at the lowest possible expense. In order to carry out this objective the following information should be available—

1. The quantities on hand, those required for manufacturing the products, and the desired amount of closing stocks. These figures are obtained from the materials budget.
2. The uses for which the products are required. This information is supplied by the production department and is essential so that the best materials for the particular work can be chosen.
3. The time required from the date of order till the date of delivery. This information will be available from the files of the purchasing department, and, obviously, is the main factor in deciding when orders are to be placed.
4. Full information regarding prices, possible or probable trends, variations, etc. This should also come from the records of the purchasing department.

From this information it is possible to prepare a purchasing programme which will facilitate operations throughout the period, and act as a guide to the purchasing agent.

Aims of the Purchase Budget.

These can be set down as follows—

1. To provide a plan whereby purchasing of materials may be carried out in a systematic and methodical manner.
2. To eliminate costly emergency orders, and to allow full advantage to be taken of price movements.
3. To enable thought to be given to the purchase of commodities in most economical quarters.
4. To ensure the necessary materials being on hand to facilitate uninterrupted production.
5. To assist in the reduction of material stocks, or the keeping of such stocks at safe minimums.
6. To secure the greatest return of capital invested in materials.
7. To promote economies through intelligent prior arrangement of the purchasing programme.

The Budget and Purchasing Procedure.

Sometimes it is asserted that because of the necessity of taking advantage of favourable market quotations, it is impossible, if not to prepare a helpful purchasing budget, at least to carry it through.

It should be remembered, however, that it is rarely the function of the purchasing department to indulge in speculation upon market fluctuations and tendencies. Some organisations undoubtedly do allow such a procedure, and during periods of rising prices materials largely in excess of production requirements are ordered. It is contended that large savings may be made in this way and delivery problems are minimised. The policy can, however, well be dangerous unless careful control is, at all times, exercised. Without such control the purchasing department is likely to continue buying as long as prices are rising for it is frequently impossible to tell just when the turn in prices will come. This would mean that the organisation may find itself burdened with stocks far in excess of its needs and with forward deliveries purchased at what subsequently turn out to be high prices. Thus gains which can undoubtedly be made at times are frequently turned into losses and sometimes financial embarrassment results. When prices are falling the opposite effect might be felt. Hand to mouth buying may result in shortages of stock and consequent interruption of production, together with materials purchased at higher prices consequent upon small orders. There is therefore much to be said for a policy which insists upon the purchasing department keeping fairly rigidly to a budget programme. It will be re-

FIGURE No. 27.

PURCHASE BUDGET.

Items	Specification No.	Unit	BUDGETED				Estimated Prices	Estimated Amount	ACTUAL		Amount
			Estimated Production Needs 1	Stock required at close of period 2	Opening Stock 3	Purchases (1 & 2 Minus 3)			Quantities	Prices	

alised that savings resulting from fortunate speculation are thereby not available but losses consequent upon failure to forecast marketing tendencies are avoided. There are few purchasing departments able to speculate profitably and it is rarely their function to do so. In any case the purchase budget should set forth what materials should be purchased in order to cater correctly for the production programme, having in mind times required for delivery. If it is the policy of the organisation to disregard this programme in order to indulge in some form of speculation it is at perfect liberty to do so though the sequence of events will seldom show the wisdom of such a policy.

Preparation of the Purchase Budget.

Once the quantities required are obtained from the materials budget, the purchase budget would then be prepared either item by item or in groups of items, having in mind the following factors—

1. *Buying Quantities.*

There are two factors to be decided upon in this connection—

(a) The minimum ordering quantity.
(b) The economical ordering quantity.

(The methods of arriving at these quantities can be ascertained from any book on Scientific Purchasing.)

2. *Methods of Purchasing.*

The following methods of purchasing can be adopted—

(a) Strictly according to requirements, possibly based on maximum and minimum stocks.
(b) In accordance with a programme suggested by the materials budget.
(c) For fixed future periods.
(d) On a fixed date each month (*e.g.* 1st) to cover materials consumed during the previous month.
(e) Upon favourable market opportunities.
(f) Speculative purchasing.
(g) On contracts.

It can readily be understood that some of these methods would not lend themselves to any system of budgeting (viz. (e) and (f)), whilst the particular method actually being adopted will have a considerable effect on the preparation of the budget.

The Budget Period.

The purchase budget usually covers the same term as that fixed for the other budgets, but it is frequently found advisable

FIGURE No. 28.

PURCHASE EXPENSE BUDGET.

Item	Costs Last Year	Purchase Volume Last Year	Ratio Costs to Volume Last Year	Estimated Costs This Year	Estimated Purchase Volume This Year	Ratio Est. Costs to Est. Volume	Actual Costs This Year	Actual Purchase Volume	Actual Ratio Costs to Volume
Supervision ..									
Buyers' Salaries									
,, Trav. Exs.									
Clerical Costs ..									
Supplies									

to prepare a number of shorter period purchase budgets as well. Thus, if the general budgetary period was six months, often six one-monthly purchase budgets would also be prepared, as more detailed control would be possible in this way. Factors which sometimes affect these intermediate term budgets are—

1. The production department's programme.
2. The availability of markets.
3. The length of time between ordering and receiving supplies.

Sometimes a moveable period budget, similar to Figure No. 4, can be used to advantage.

Responsibility for the Purchase Budget.

The purchase budget is generally prepared by the purchasing agent, except in a small business, where it may be the task of the factory manager. Closest co-ordination must at all times exist between the production, stores and purchasing departments. (See Figure No. 27.)

Purchase Expense Budget.

Generally, having completed the purchase budget, the purchasing agent prepares a purchase expense budget. This contains particulars of all expenses which can be chargeable against the purchasing department. Frequently ratios are introduced to act as a check upon rising expense amounts, though the ratio method is often not very reliable because the volume of purchases may not greatly affect purchase costs. Sometimes the cost of purchasing is added to and spread between the various material costs and at others it is treated as a separate indirect manufacturing expense. (See Figure No. 28.)

THE LABOUR BUDGET

Interpretation of the Term.

It is essential to decide at the outset what is meant by a Labour Budget, as various interpretations have been given. These include—

1. The treatment of the budget as expressing the amount of expense to be incurred in productive and service labour, together with full details as to how many men are to be employed and for what periods.
2. The number of employees and the times of their employment may be planned, the actual amount of wages to be incurred being obtained through an analysis of the various functions covered.

3. An attempt may be made to estimate the amount which will have to be found for wages over the period or periods, without attempting to arrive at the number of men required and during what periods employment is likely to fluctuate.
4. The number of employees that will be necessary, together with the times of their employment and the amount which it is expected will be incurred in productive departments only, are estimated. In such a case service departments such as the repairs and maintenance department, for example, would be treated quite separately, and the men employed in that department would not figure either in the labour budget or the payroll budget, the total expenses in this connection being treated as separate items and covered by separate budgets.

The Purpose of the Labour Budget.

There are two main reasons for the preparation of this budget—

1. To arrive at the necessary employees for carrying on the operations of the organisation, and to supply this information in advance so that arrangements can be made to procure such labour.
2. To provide estimates of the total labour cost, so that this information can be used by the financial department in the preparation of the financial budget, or in the compilation of costs.

Sometimes a payroll budget is prepared to cover the necessary cash outlay.

Effective Control of Labour.

The following factors must be known in order to provide an effective control—

1. For what purposes the labour is required.
2. The procedure to be adopted for procuring labour.
3. The method of classification and recording of labour operations.

When this information is available, it will be found possible to proceed with the preparation of a labour programme.

Ascertaining Labour Required.

Obviously, it is necessary for an enterprise to know how many men will be required to process the goods it is proposed to manufacture. This is especially so where the number of

employees fluctuates over a period, either because of seasonal production, or other reasons. Where the fluctuations are violent, careful planning is necessary to see that production is not upset by any shortage of labour. Where the number of employees varies little throughout the year, the problem is neither as serious nor as difficult. Here again, however, the work necessary to analyse the essential productive operations together with the subsequent preparation of actual labour requirements will enable a thorough grasp of the whole problem to be obtained. Furthermore, economies in the total wages payable will be facilitated. Where standard costs are in operation, the data required to arrive at the total number of employees likely to be wanted is already available, and this would also probably be true in the case of job costs. In many cases, however, it will be found necessary to arrive at both numbers and amounts through the analysis which will have already taken place in connection with the production budget.

Methods of Estimating.

The following methods are used for the purpose of computing the amount of labour likely to be required—

1. The operations to be performed are analysed and the number of labour hours required to make each product are estimated. The application of this data to the figures of the production budget would yield the required labour hours, which in turn could be converted into the number of men required. This information may already be available from the production department.
2. A study of past records is made in order to find a more or less constant relationship between production volume and labour hours incurred. This comparison could be made for labour as a whole, for each class of labour, and for each class of product. These ratios will be more accurate if separate ones are determined for the different classes of product manufactured.
3. A usable value estimate is secured from a study of past labour cost per ton, yard, square foot, or other unit common to all products and this unit cost would be applied to the total production units planned for the coming period. This would be particularly useful under varying volume, where labour hours were not of great importance as a forecasting factor.

FIGURE No. 29.

LABOUR BUDGET.

Department	LAST PERIOD			THIS PERIOD-BUDGET			Estimated Rate Per Hour	Estimated Amount	ACTUAL			
	No. of Employees	No. of Labour Hours	Wages Cost	Estimated No. of Employees	Class of operatives	Estimated Labour Hours			No. of Employees	Actual Labour Hours	Actual Rate Per Hour	Actual Amount

4. The total hours of labour in each item of finished goods are estimated and the quantities of finished goods being known, the total labour hours are arrived at by simple calculation. Where the labour is not of the same grade (and this would generally be the case) an examination of processes may be necessary.
5. The ratio of labour to machine hours is used. As the number of machine hours estimated to complete the manufacturing operations would probably be available from the production department, an estimate would be made of the amount of labour necessary to complete the machine hours.
6. Sometimes the labour cost per unit of production is obtained for a number of seasons previously, and this unit cost is applied to the production for the current period.
7. Where standard costs are in operation, the results of previous years act as a most helpful factor in the preparation of current estimates.

Some of these methods may be sufficiently accurate for payroll budget purposes, but may not give sufficiently detailed analyses to enable the labour budget to be based on them.

Keeping Employment Even.

Recognising the value of keeping production and therefore employment as steady as possible, attempts are now made to even out production, even where essential conditions somewhat complicate the problem. This policy may, of course, mean an increase in stock figures, but in any case the whole question is one which must be decided according to a number of other conditions, generally peculiar to each business, such as the capacity of the machines, the value of stocks to be carried, and the extent to which the seasonal variations would ordinarily control the production policy. Often the labour budget will be found one of the most difficult to prepare, especially in the case of goods made to order. (See Figure No. 29.)

Value of the Labour Budget.

Where some degree of looseness in employment has operated previously, a thorough analysis of all the productive operations of the business to ascertain the minimum number of men required in each and every case, will often show considerable economies. There are many instances where reduction of employees and of total wages paid have become possible through careful budgetary preparation. It often happens that twelve

FIGURE No. 30.

PAYROLL BUDGET.

Items	January		February		March		April		May		June		Total	
	No.	Value	No.	Value	No.	Value	No.	Value	No.	Value	No.	Value	No.	Value
Executive.														
Budget														
Actual														
Office.														
Budget														
Actual														
Sales.														
Budget														
Actual														
Production.														
Budget														
Actual														
Purchases.														
Budget														
Actual														
Services.														
Budget														
Actual														
Sundries.														
Budget														
Actual														

men operate in a department and the whole twelve are kept on the payroll, whereas actually there is enough work for eleven only. It is in the planning procedure that the surplus man in the department is discovered and the work put into the labour budget is almost always fully repaid.

Relationship between Labour and Payroll Budgets.

Where a payroll budget is to be prepared, the information given in the labour budget is used and the various amounts of wages that will have to be paid are calculated. From this data the total of wages payable is calculated. A suitable form for a payroll budget can be seen in Figure No. 30.

There is much to be said for the elimination of the payroll budget in actual practice. Frequently each department prepares a list of employees required and frequently the amounts payable to such employees find their way into the budgetary programme by means of the departmental budgets. For example, in any estimates of the cost of repairs the wages payable are taken into account and the total of the repairs and maintenance budget would include the wage factor. There is, therefore, always a danger of duplication and in any case a certain amount of confusion during the initial stages of budgetary installation is almost unavoidable. Furthermore, even where separate departmental estimates are made and these are forwarded for inclusion in the payroll budget little extra value results. In order to compare actual results with budgetary estimates it would still be necessary to take the departmental figures and to check the results upon a departmental basis.

The only compensating factor in this regard is that the accounting section would frequently find their work facilitated if there was one figure for inclusion in the financial budget. Even so, however, where different pay days are in operation even this advantage would largely disappear as segregations of the amounts to be paid would become necessary. Despite these factors, however, many organisations do prepare both labour and payroll budgets.

Desirable Procedure.

This is therefore rather a controversial subject, but for an average manufacturing business, preparation of the following is suggested—

Labour Budget.—To show the number and classification of employees and the total amount of the payroll of the manufacturing operations. This could be prepared by the factory manager, thus avoiding many of the difficulties mentioned above.

Departmental Budgets.—To show the number and classification of employees and the total amount of the payroll relating to each other particular department (e.g. Sales Department for Sales Staff Salaries; Purchase Department for Purchasing Salaries, etc.). These would be prepared by the respective departmental executives

Three Other Budgets.

There are three other budgets which can claim some association with the Labour Budget—

1. *Occupational Budget.*

This is designed to set forth rates of wages applicable to each type of work in the factory, having in mind the degree of manual and intellectual ability necessary. This budget frequently discloses differences in rates paid which are both surprising and wrong in policy, but the budget itself is seldom used. Industrial wage rates often make it superfluous.

2. *Welfare Expense Budget.*

This is, of course, prepared only by organisations operating a welfare expense department. Through this budget, an analysis of the total expense of all welfare work is made, and estimates of total cost prepared. These estimates are similar to those of any other department, as they are used as guiding posts for the control of the departmental expenses during the budgetary period.

3. *Staff Department Budget.*

This budget is also seldom prepared and is in type similar to the welfare expense budget. It seeks to analyse the expenses of the Staff Department, which is under the control of the Staff Superintendent, and to provide estimates which can be used for the control of the department's expense operations. Generally expenses of this kind are included in some other budget, such as Administrative or Office Expense.

The Labour Budget Period.

In the specimen labour budget form given, the number of men in each department is given. This information would be obtained from the totals of the operations to be conducted by that particular department over the period covered by the budget. The labour budget, however, may differ from others in its treatment of periods. For example. the whole period being covered may be six months. Employment figures, however, may be analysed and estimated month by month, or, alternatively, the only practicable method may be to take a period which approxi-

mately corresponds with the time necessary to process a major product or to complete a major productive operation. Thus, where each production order takes three weeks to complete, the best basis for the labour budget may be a three-weekly period. Even if this were so, however, as far as the payroll budget is concerned, it would still be necessary to adopt a basis corresponding to that of other budgets, because the figures for the total period are necessary for compiling the financial budget and the estimated profit and loss account and balance sheet. This factor may be sufficiently important in certain cases to compel the preparation of the labour budget on a similar basis. The fact that the labour budget is prepared over a different period would generally not affect the issue as long as the ordinary budgetary period is covered by the payroll budget, or total wages costs are calculated as part of the departmental expenses.

The Use of Ratios.

Because of the necessity for accuracy, it is essential to stress the advisability of preparing the figures only after a scientific analysis of all productive operations. It would be idle to suggest, however, that this will be found practicable in every case. At times it may be quite impossible to do anything more than endeavour to arrive at an approximate estimate of labour information and the payroll figures. Frequently an approximate control is possible in such cases by the use of predetermined ratios of direct labour cost to some other factor in the cost of sales. There are a number of ratio methods which can be used, and a review of the figures of previous periods to discover a relationship between direct labour and some other factor should disclose the most suitable. It may be found that in previous periods direct labour has consistently amounted to approximately 75 per cent of direct material values. Knowing what the material values for the budgetary period will approximate (from the materials budget), the amount of direct labour can be calculated. A further analysis of previous figures would show the average wage, and with this information it is possible to estimate the number of employees for the period. The next step would be to arrive at the amount of indirect labour, and here again the ratio system could be used. Calculations of the percentage of indirect labour to direct labour in past periods would guide the preparation of the estimated amounts for the future.

The labour budget and the payroll budget, where this latter is prepared, are most valuable to control operations, and this aspect of the matter is covered in later chapters.

PLANT AND EQUIPMENT BUDGET

This budget is concerned with the improvement and extension of plant and the acquirement of new plant. Sometimes it includes repairs and maintenance where these expenses are not the subject of a separate budget. There are some marked differences between the plant and equipment and all other budgets. This is primarily because it deals with data which really has no immediate direct connection with the Profit and Loss Account, though it does, of course, affect the financial budget. Furthermore, quite frequently this particular budget has a period of its own. Whereas the ordinary time covered by the various budgets may be six months or one year, often plant and equipment estimates cover one to five years or possibly longer. The reason is that only by careful analyses over lengthy periods can decisions be made as to the wisdom or necessity of certain capital expenditures on new equipment. In fixing this period individual circumstances must be taken into account, but where it is found that no advantage is to be gained by departing from the ordinary budgetary period, it would be foolish to make any alteration. The Bell Telephone System of Companies have long-range plant and equipment budgets of five, ten and thirty years.

Objects of the Plant and Equipment Budget.

1. *To prevent over-expansion.*

Where plans are not carefully considered in advance and the procuring of new equipment harmonised and kept in line with other factors, there is always the danger that machinery may be obtained without sufficient consideration being given to the question. Expansion must be considered in relation to the selling, productive and financial capacities of the business, and this budget will help correct decisions to be made.

2. *To make proper financial provision.*

Planning for new equipment necessitates careful consideration of all capital outlays from the standpoint of the cash position. This is important in any business, but particularly so where there is any shortage of working capital. Sometimes financial arrangements can be made only by going outside the business, and predetermined necessities give sufficient time for this to be done.

3. *The preservation of proper relationships.*

This budget facilitates a proper relationship between retirements, replacements, maintenance and depreciation. Each of these factors has an influence on the question of the purchase of new equipment. The budget not only makes the preservation of correct relationships possible but ensures the proper procedure in the approach to these matters.

Its Importance.

The tendency towards economy development as shown in the increasing replacement of men by machines, involves an increasing fixed capital, and this has greatly added to the importance of planning purchases of this kind. Mistakes in such purchases are generally difficult to make good, and most machines cannot be adapted to changed circumstances without great loss. The facts of the matter have been pithily summed up in the statement that it is easy to get rid of any inefficient workmen, but an inefficient machine so often must stay. The importance of this budget varies in different branches of industry, largely according to the proportion of fixed capital to total capital. It is relatively large in such industries as mining, quarrying, shipping and ship-building, iron and steel industries, but often smaller in textiles, leather, rubber and timber. In these latter industries working capital is relatively larger in consequence of the value of raw material. In commerce and banking fixed capital is only of subordinate importance.

Causes of Machine Replacement and Expansion.

There are two factors which either separately or jointly are responsible for the decision that a machine should be scrapped. The first is the economic factor of obsolescence—the inability of the old machine to compete with newer machines put on the market and which will give better results in quantity, quality or costs. There is also the physical factor—the inability of the old machine to cope with increased output, to turn out the quantity necessitated by rising sales, together with the effect of such inability upon the whole plan of productive routine.

The following cost factors should be considered when choosing new machinery—

(a) *Investment.*
1. Initial cost of machine.
2. Cost of accessories.
3. Installation.
4. Depreciation.

(b) *Working.*
1. Repairs and maintenance.
2. Supervision.
3. Power.
4. Operating wage rates.
5. Hourly operating charge.
6. Hourly idle time charge.
7. Normal output.
8. Unit production costs.

In the preparation of the plant and equipment budget it is generally necessary to divide recommendations into—

(a) Replacements.
(b) Additions.

The most common reasons given for replacements are—

1. The machine is too light for heavy duty.
2. Changes in methods are necessary.
3. A machine particularly suitable for the job is necessary, rather than using other machines which are primarily designed for other purposes.
4. The machine is too costly to operate.
5. It is impossible to produce good work.
6. The machine is in bad condition, and it will not pay to rebuild.
7. It is a bad fire risk.

Additional machines are necessary—

1. To supplement existing machines where the latter cannot produce the necessary output.
2. To supersede hand labour.
3. To obtain new machines of totally different type.
4. To obtain machines similar to those in operation, but capable of better quality or greater accuracy.

The replacement of a machine is, therefore, usually considered when and because new machinery will effect economies of some kind or other (such as in labour, in materials, in power or in floor space) or because of some other advantage (such as greater accuracy, a better quality product, better processing, faster operation, lower in-process inventories, or two or more of such factors). It is generally possible to reduce these advantages to a statement of tangible money savings, as this is, after all, one of the most important factors to be considered when replacements are proposed. It is frequently found that one machine working part time is a more economical proposition than another working full capacity. Together with other factors, the matter of cost must be taken into account. This in turn is affected by the life of the machine, the question of repair and maintenance costs, the likelihood of the machine being superseded by another incorporating later inventions, or by the possibility of cessation of demand for the particular product to be processed by the machine. These factors have their bearing upon the working life of the machine, and, considered in relation to cost, will enable estimates of machine expenses to be prepared. Even where it is proved conclusively that a machine is available which, if purchased for the purpose of replacing an existing machine, will show considerable savings, there is still a further question to be taken into account.

It is possible that, though the savings would be of considerable amount, the company's position may be such that the withdrawal of the necessary capital from the working resources of the business may not be warranted. Thus, not only is it necessary to show that savings will result, but also that the savings are sufficiently great to make it wise to take the necessary money from its present use to that of purchasing the machine.

The Desirable Amount of Plant.

The amount of plant which it is economically desirable that a concern should have depends upon—

1. *The technical position of the undertaking.*

This is the most uncertain factor in the framing of the budget (especially in certain industries) as improved designs, apart from any revolutionary inventions, generally involve modifications of working plant. The exact effect in each case must be considered as each new design is put on the market, but the question of policy and possible trends in these matters should be given attention when preparing the budget.

2. *The sources of capital.*

The supply of capital available and the cost of procuring it must be considered when preparing estimates of capital expenditure. Where the capital is both difficult and expensive to obtain, the policy in relation to the purchase of new equipment, or replacement of old machines by later models, may have to be on a very conservative basis.

3. *The future sales.*

Obviously, the essential factor here is the nature and extent of the future market. Where there is no stability, and it is quite certain that some lines will lose favour, the greatest care would have to be exercised in dealing with any question of expansion over the period. A budget calculated on the basis of a carefully estimated trend would have the effect of preventing the acquirement of new plant at a time when increased business was the result only of some cyclic movement or seasonal fluctuation. A study of trends, seasonal movements, and trade cycles will largely help towards accurate judgments.

Considerations in Preparation of the Budget.

In certain exceptional cases, it is possible that future requirements may be estimated as being less than present demand, and where this is so a plant and equipment budget in its usual terms may not be drawn up, though even here it would be wise to prepare a statement setting forth the proposals for disposing of any surplus equipment. As a corollary also, it

may be necessary to conduct an examination to consider any possible other uses within the business for the surplus plant.

In the event of the estimated trend of sales showing that at least normal increases can be assumed, the following considerations should be taken into account—

1. How far the increased demand could be satisfied by a more complete use of the existing plant, or through an increase in the number of shifts worked.
2. At what stage output should be increased by the acquirement of new plant, the extension of available plant, or the establishment of new workshops.

The essence of a plant and equipment budget, therefore, is the planning of extensions and new plant having regard to considerations of space, time and means These extensions are grouped under three main headings—

1. Those necessary for efficient operations.
2. Those showing savings to justify outlay.
3. Those desirable, but not absolutely necessary.

It is also often found that an appropriation is made for contingencies, but the best practice is to stipulate that this amount cannot be used without a written explanation and request going forward for approval by the budget committee or an appropriate senior executive.

Authorisation of Projects.

The budget will include some projects which have been authorised and others for which approval has not been granted, even though they form part of the budget. The budget generally includes separate requests for authorisation of those projects included which will be carried out within the budgetary period operating in relation to the other budgets, as distinct from the plant and equipment budget. Thus the budget is frequently divided into three parts—

1. Those projects for which authorisation is required, after the approval of the budget.
2. Contingent expenditures which are noted but not authorised at the time of budget approval; authority must be sought when the necessity arises.
3. Those projects which are the subject of long range planning, but which will not require definite authorisation until a later period.

The three sets of figures are, of course, moulded into one budget. Figures 31 and 32 show the form of a Plant and Equipment Budget.

FIGURE No. 31.

PLANT AND EQUIPMENT BUDGET.

		OLD EQUIPMENT FOR SALE					
Mach. No.	Machine or Groups	Cost	Reserve for Depreciation	Expected Realisation	Actual Realisation	Date Sold	Reason for Sale

FIGURE No. 32.

PLANT AND EQUIPMENT BUDGET.

NEW EQUIPMENT							
Machine Required	No.	Estimated Cost	When Required	Estimated Life	Estimated Depreciation	Estimated Repairs	Estimated Break-Up Value

An authorisation form should include the following information—

1. Title of project.
2. Description.
3. Specification as to whether it is an addition, a betterment or a replacement.
4. Reasons for recommendation.
5. A summary of the estimated total cost by showing the main items.
6. The amount of expenditure to the end of the current period.
7. The estimated expenditure for the remainder of the year by months or quarters.
8. The probable date of completion.

When the outlay has been authorised and the purchase and installation are proceeding, monthly reports containing the following information should be forwarded to the budget committee—

1. The title of the project.
2. Whether it is an addition, a betterment or a replacement.
3. The date the project was authorised.
4. The amount authorised.
5. The unencumbered balance.
6. The unexpended balance.
7. The estimated additional authorisation necessary (if any).
8. The estimated cost of requirements during the following month, and month by month to the end of the period.

Responsibility for the Plant and Equipment Budget.

Preparation of this budget is generally effected by the Factory Manager or the Plant Engineer. In order that the figures may be correctly and intelligently compiled, especially where long range estimates are required, some knowledge of the future policy of the business is essential. This would be particularly so in relation to the proposed expansion of the company's operations.

Sometimes a division of responsibility is made. Replacements and immediate purchases are estimated by the Factory Manager, while equipment becoming necessary under a long range policy is detailed by the General Manager.

REPAIRS AND MAINTENANCE BUDGET

When dealing with the labour budget it was pointed out that whilst it sometimes included all indirect and direct wages, frequently attention was devoted to certain processes, and possibly not to such services as repairs necessary to and maintenance of the plant. It is perhaps necessary at this stage to consider what is covered by maintenance costs. These may be described as the expenses necessary and incurred in repairing plant and equipment or in partially renewing it, so as to overcome wear and tear and at least to reduce deterioration. The question of obsolescence does not enter into this matter, as maintenance is only concerned with the physical condition of the equipment.

Cost Variations between Periods.

Before budgetary procedure gave close control over maintenance costs, it was usual to compare one period with another where some check over the amount spent was desired. This was quite an unsatisfactory method, as many factors could be in operation to spoil any chance of valid judgment from such comparisons. For example—

1. The policy in relation to maintenance could vary year by year. Sometimes a much more vigorous policy is prosecuted, while at others the necessity for economy may mean that maintenance expense is cut down severely.
2. The differences in use of equipment year by year could also vary. It is obvious that where a machine is working at 100 per cent capacity, the maintenance charges are likely to be very much heavier than if it is engaged only 50 per cent. Furthermore, under certain circumstances, maintenance work may have to be carried out after hours, and this may mean wages at higher rates.
3. The condition of the property at the beginning of the period would also be important. It may be necessary to spend a large sum of money on repairs and maintenance in one period and practically nothing in the next. As an example, a machine may require a thorough overhaul every nine months, and at the 1st January, 1930, its condition may have been such that a complete overhaul was due and was fixed for February. As another nine months would have elapsed by November, the machine would again undergo complete repairs at that date. In 1931, however, it would not be due

for overhaul until August. Thus the year 1930 would have to bear two charges, and 1931 only one. In addition to this, consideration must be given to the question of whether complete maintenance work has been carried out in the past. Where it has been deferred until a more opportune time, the condition of the plant is not likely to be of the best, and therefore charges during the budgetary period may be heavy.

4. Uncertainty of labour conditions may reflect in maintenance charges during one period as against another. Falling labour and material costs may have a decided effect upon the total of maintenance costs. In addition the type of workmen operating a machine often affects the maintenance figures. An expert operator, on a higher wage, who is careful with a machine, may be a more economical proposition than an inexperienced man, who does not understand the value of keeping repair work at a safe minimum.

Basis of the Repairs and Maintenance Budget.

The principle embodied in the control of maintenance costs by a budget is that which underlies the preparation of all budgets—a thorough consideration is given beforehand to the work recommended and decisions made as to what is to be done within the budget period and what the work should cost. Every effort is then made by those responsible for the costs to complete the work within the allowance which they themselves agreed upon.

Responsibility for the Repairs and Maintenance Budget.

The officer responsible for the preparation of this budget varies according to the size and type of business. The preparation may be undertaken by—

1. The Works Manager.
2. The Works Engineer.
3. The Repairs and Maintenance Foreman.
4. The Production Manager.

No matter who else prepares the figures other than the Works Manager they are generally submitted to the Works Manager before being passed to the Budget Officer for inclusion with the other schedules.

Purposes of the Budget.

The following are the aims in preparing estimates of repairs and maintenance costs—

1. To save time during the year by concentrating attention on the problem before expenditures become necessary, but while all details and costs are available.
2. To estimate the total of the expense as a guide for the financial department.
3. To act as a systematic plan for the scientific management of the problem, and limit appropriations without adversely restraining activities.
4. To act as a basis for decisions in relation to replacements of equipment.

The Preparation of the Budget.

It is necessary to take all factors into account when preparing estimates. Furthermore, a complete survey of the position by an inspection of all units affected is essential. Only by such a method can reasonable accuracy be arrived at, and as a general rule it is wise to consult the various foremen in charge of the machines to obtain their opinion as to what repairs are likely to be necessary. The largest portion of repair work often consists of small jobs of varying natures, possibly scattered throughout the plant. It may, however, be necessary to undertake some very large repairs as well, and frequently executive approval will be found necessary for these works. This should be obtained in the form of tentative approval when the budget is being prepared.

Repairs Effected by the Factory.

During the foregoing consideration of the question, it has been assumed that the factory itself would carry out the repair and maintenance work found necessary. Where this is not so and outside companies are engaged, the position, from a budgetary preparation standpoint, is no different, except that there may be a little more difficulty in arriving at the estimates of the amounts of the various expected repair jobs. Analyses of past figures in relation to charges made for repairs and maintenance should, however, enable reasonably close estimates for the future to be gauged.

Repairs not included in Budget.

It is frequently found that many businesses, though fully seized with the importance and value of budgetary preparation and control, do not prepare a repairs and maintenance budget,

Figure No. 33.

REPAIRS AND MAINTENANCE BUDGET.

No. of Machine	Name of Machine	Depart-ment	Nature of Expected Repairs	ESTIMATED COST				Cost Last Period
				Materials	Labour	Expense	Total	

but, rather, in the light of past experience, allocate a certain fixed sum for this expense. This is not a good method, especially where the charges are heavy, and every effort should be made to complete a budget so that the ideal of accurate information is not interfered with. In addition this particular budget is not as a rule a very difficult one to prepare or to cover by control methods. Where a repair which was not anticipated at the time of the preparation of the budget and was therefore not included in the estimates, is later found to be necessary, executive approval should be obtained. The policy of deferring a repair because it was not sanctioned in the budget can be dangerous. It would obviously be wrong to hold up a repair that would possibly interfere with the productive capacity of the machine and the routing of work, because allowance for such a repair was not made in preparing the budgetary estimates. Therefore it is usual to find some provision made for speedy authorisation of essential repairs not covered in the budget figures. (See Figure No. 33.)

MANUFACTURING EXPENSE BUDGET

Classification of Manufacturing Expenses.

Manufacturing expenses may be defined as those incurred in or incidental to production, without being directly chargeable to any particular product. The following expenses would generally be included in the total manufacturing expense—

1. *Controllable Expenses.*
   - (a) Indirect Labour.
   - (b) Workers' Compensation Insurance.
   - (c) Employment and Welfare Expenses.
   - (d) Watchmen and Timekeepers.
   - (e) Factory Indirect Materials.
   - (f) Power, Heat, Light and Water.
   - (g) Indirect Production Expenses.
   - (h) Perishable Tools and Operating Supplies.
   - (i) Repairs and Maintenance—Labour.
   - (j) Repairs and Maintenance—Supplies, etc.
   - (k) Purchasing Department Expense.
   - (l) Stores Department Expense.
   - (m) Dies, Jigs and Fixtures.
   - (n) Experimental Expenses.
   - (o) Factory Printing and Stationery.
   - (p) Spoiled Work.
   - (q) Fire Protection.
   - (r) Supervision and Clerical.
   - (s) Indirect Production Expenses.

2. *Fixed Charges.*
    (a) Depreciation on Buildings.
    (b) Depreciation on Plant and Equipment.
    (c) Insurance.
    (d) Rates and Taxes.
    (e) Rent.

Where, however, any of the foregoing had already been included in some other budget (e.g. Repairs and Maintenance) they would be excluded from the Manufacturing Expense Budget.

Methods of Allocation.

In costing it is usual to allocate manufacturing expenses to the particular product or department by means of apportionments based on such factors as—

1. The direct labour hour.
2. The direct labour cost.
3. The machine hour rate.

In the case of the direct labour hour method, the estimated total expenses are divided by the estimated total operating hours and a rate is thus struck which will enable the product to be charged with what is deemed a fair proportion. The direct labour cost is based on the same principle, except that instead of the rate being a certain amount for each hour worked, it bears a relationship to each £1 of wages spent. In the case of the machine hour rate, an attempt is made to total the whole of the expenses which would be incurred in connection with a machine, such as depreciation, portion of rent (according to space occupied), insurance, oils and greases, etc., lighting and power, and possibly interest, the total being divided by the number of hours that it is estimated the machine will operate during the period.

Difficulties in Preparation.

In the budgets already described matters to be covered have usually been known. With the manufacturing expense budget, however, the following difficulties may arise—

1. The items making up the manufacturing expense may be varied in nature, and may be the responsibility of a number of persons, e.g. Power House Expense would be differently controlled from Insurance.
2. Some items may have already been included in other budgets. Wages of watchmen and supervisors may have already been included in the labour or payroll budgets.

3. It may be difficult to arrive at an adequate classification of all the expense items. This difficulty would be more apparent in the preparation of the first budget than in subsequent budgets. Where there is a cost system in operation, the problem is greatly simplified.
4. It may be difficult to provide satisfactory standards for the control of this type of expense. This would be particularly so where there was any overlapping of functions.

Methods of Preparation.

In order to overcome the foregoing difficulties, the following methods of preparation may be adopted—

(a) The cost department (where such exists) is requested—
   1. To prepare details of all items included in manufacturing expenses in previous years.
   2. To segregate these into two classes—
      (a) Those expenses already covered by other budgets.
      (b) The balance of the manufacturing expenses—those not covered by any other budget.
   3. To prepare estimates of 2 (b) in relation to the budget period, having in mind the proposed production, inventory and purchasing programmes.
   4. To submit these estimates to the officials responsible for them, obtaining their advice and approval.
   5. To combine these estimates so as to complete a manufacturing expense budget, comprising all indirect expenses not covered by other budgets and to forward this budget to the budget officer.

(b) Where there is no Cost Department, the same functions may be exercised by the Accounting Department.

(c) The official responsible for each separate classification of expense may make the necessary estimates and then these may be combined. This method requires very careful planning and supervision in order that each official may prepare his portion of the estimate properly, and to schedule the estimates so that they will flow into the central authority at the proper time. It has, however, the very definite advantage of placing the full responsibility for the preparation on those responsible for its performance.

Budgets Affected by Manufacturing Expenses.

It is now proposed to examine the various expenses to ascertain in which budget they would appear and also to allocate the responsibility for their preparation.

Indirect Labour. Supervision and Clerical. Watchmen and Timekeepers.	These would generally be included in the labour budget, and would often be prepared by the factory manager.
Repairs and Maintenance—Labour. Repairs and Maintenance—Supplies, etc.	These would appear in the repairs and maintenance budget.
Factory Indirect Materials.	These would be included in the materials budget, but the cost incurred would form part of the manufacturing expense budget, and they would probably be estimated by the factory manager.
Workers' Compensation Insurance. Depreciation on Buildings. Depreciation on Plant and Equipment. Insurance. Rates and Taxes. Rent. Sundries. Factory Printing and Stationery.	These expenses would probably be estimated by the accounts department, and would form part of the manufacturing expense budget.
Power, Heat, Light and Water.	Sometimes a power expense budget is prepared by the engineer in charge of the power plant. Where this is not done, estimates for inclusion in the manufacturing expense budget may be prepared by the engineer or by the factory manager.
Employment and Welfare Expenses. Indirect Production Expenses. Dies, Jigs and Fixtures. Fire Protection. Spoiled Work. Experimental Expenses. Perishable Tools and Operating Supplies.	These would generally be prepared by the factory manager and would appear in the manufacturing expense budget.
Purchasing Department Expenses.	Generally this list is prepared by the purchasing department and sometimes the total expenses are apportioned to various purchases made during the period, whilst at others the total expenses are included in the manufacturing expense budget.
Stores Department Expenses.	These would usually be prepared by the stores manager or supervisor for inclusion in the manufacturing expense budget.

FIGURE No. 34.

MANUFACTURING EXPENSE BUDGET.

A/c No.	Account	Average Last Period	Unit Cost Aver. last Period	Last Month	Unit Cost Last Month	Budget This Month	Actual This Month	Difference	Reasons
	Patterns								
	Punches, Dies and Jigs								
	Perishable Tools								
	Power								
	Lighting								
	Heating								
	Water								
	Rent								
	Oils and Greases								
	Materials								
	Insurance								
	Depreciation								
	Wages								
	Salaries								
	Records								
	Printing and Stationery								
	Telephone								
	Travelling Exs.								
	Inspection								
	Spoiled Materials ..								
	Gen Factory Exs. ..								

No attempt is made to give a definite procedure to be followed in the above cases. Rather the foregoing is a general indication only. The exact method to be adopted will depend entirely upon the conditions operating in the particular business preparing the budget. (See Figure No. 34.)

Flexibility of Estimates.

Though the question of manufacturing expense is being dealt with in this chapter from the standpoint of a total fixed amount, it cannot always be advantageously budgeted for in this way. In dealing with Variable Budgets, an attempt is made to show the manner in which these expenses may be much more satisfactorily covered and standardised in relation to actual production.

Chapter V

THE ADMINISTRATIVE AND CASH BUDGETS

The administrative expense budget—analysis of expenses—expense ratios — preparation — salaries — responsibility—possible economies—financial or cash budget—its objects—effect of seasonal conditions—the budgetary period—responsibility—preparation—forecasting receipts—forecasting disbursements—essentials for successful financial budgeting—the operating capital budget—the profit and loss account and balance sheet—completion of final estimates—advantages of completing estimates—relationship with balance sheet—procedure—advantages of preparing a balance sheet—analysis of final statement—importance of ratios—thorough analyses essential—responsibility—revision of the budgets—control.

The Administrative Expense Budget.

Administrative expenses can be defined as those incurred in the direction or management of a business as distinct from such other functions as manufacturing or selling. An administration expense in one business may come within a different category in another. Usually the following items are included—

Salaries.
Audit Fees.
Postages and Telegrams,
Printing and Stationery,
Legal Expenses.
Subscriptions,
Fees,
Office Rent and Insurance.

Sometimes such items as Bad Debts and Discounts are also included but these are at other times referred to as financial or selling expenses.

Analysis of Expenses.

Budgeting for these expenses is generally simplified because it is a case of following the accounting segregations and

sequences of the organisation units. The only real difficulty lies in the estimate of the amounts which should be allowed. It is very often found almost impossible to arrange for anything like adequate reduction in administrative expenses when such is demanded by falling turnovers which necessitate economies in every branch of the business. A large portion of administrative expense consists of what is generally termed "office expense." Of late this has been receiving much more attention than formerly. Close analyses of the various items are being constantly made and attempts to standardise the operations are becoming much more frequent. Some progress has been made, but much remains to be done. In 1928 a paper manufacturing company in U.S.A. closely dissected various business practices in different industries and issued a survey report at the conclusion of its investigations. In this it stated that the ratio of office expense to general overhead expense in manufacturing industry in general was found to average 52 per cent. Actually this ratio was based upon information and statistics received from the Harvard Bureau of Business Research, United Typothetate of America, Federal Trade Committee and annual reports of representative companies. Amongst others, the survey report recommended the following measures for the reduction of office expenses—

1. The elimination of all unnecessary work.
2. The determination of the one best way of doing each kind of office work.
3. Determination of units of measurement covering all the principal duties.
4. Determination of what constitutes a day's work with respect to the principal functions in the majority of offices. This, of course, relates to the time requirements.

It will be seen that those methods which have in the past been applied to production in order to promote efficiency and discover gauges whereby such efficiency can not only be measured but also controlled, are now being used in the case of office and administrative expense. This field is still largely untouched, but it seems beyond doubt that excellent opportunities for economies will become available in these expense spheres as have already become evident in the case of production control. In the past the office has largely appeared to be sacrosanct, though why it should be so defies explanation. Office workers are engaged in production in exactly the same way as other employees of the business, except that the results of their work are perhaps less tangible.

Expense Ratios.

In 1930 the National Office Ratios Survey was made jointly by the "System" Magazine and the National Office Management Association (U.S.A.). Its purpose was to obtain information on which ratios for clerical operations could be estimated, so that office executives would have a reliable basis for comparisons. The subjects included in the survey were—

1. Floor space per clerk.
2. Cost of stationery and supplies.
3. Cost of equipment and machinery.
4. Obsolete equipment.
5. Time requirement by orders.
6. Standards for fourteen clerical jobs as under—
   (a) Addressing envelopes.
   (b) Typing copywork.
   (c) Fill-in letters.
   (d) Typing from shorthand.
   (e) Typing from dictation machine.
   (f) Invoice typing.
   (g) Order writing.
   (h) Filing.
   (i) Addressing.
   (j) Duplicating.
   (k) Tabulating.
   (l) Calculating.
   (m) Invoicing.
   (n) Bookkeeping.
7. Office lighting.
8. Clerical salaries.

Budgetary Preparation.

These subjects are very suggestive as bases for adoption in completing the budget. It is necessary to divide each of the groups (such as, for example, administrative expense, office expense, and general expense) into the various accounts which it includes. Each account is then analysed and the totals for previous periods are examined in relation to the various factors which affected them. Comparisons between past periods and the future period are made and estimates of totals likely to be incurred in connection with the forthcoming programme are ascertained. Where standards are in operation (for example, standard costs of filing, invoicing, bookkeeping, etc.) the calculations for the budgetary period are carried out by the conversion of the future operations in terms of those standards, and the amount which is to be allowed then becomes simply a matter of arithmetic.

Salaries.

Office and executive salaries frequently form a large percentage of the total expense. Even where a labour budget is prepared, these salaries are very seldom included but are usually treated as part of office expense. The total amount of some salary items is known with certainty, as most of the executive officers and office employees have fixed salaries. Variations in sales and production will have little effect on office and administrative charges. It is perhaps this factor which is responsible for the condition of affairs which operates and shows itself in a laissez-faire policy in relation to these expenses, even when conditions in the business itself are such as to warrant, and, furthermore, to demand the utmost economy in every department.

FIGURE No. 35.
ADMINISTRATIVE EXPENSE BUDGET.

No. of Account	Account	Last Period		This Period		Difference
		Budget	Actual	Budget	Actual	
	Administrative Sals.					
	Trav. Expenses ..					
	Entertainment Exs.					
	Printing and Stationery					
	Postages and Telephone ..					
	Legal Expenses					
	Insurance					
	Subscriptions .					
	Office Salaries ..					
	Audit Fees					
	Exchange and Bank Charges					
	General Expenses					
	Interest					
	Rates					
	Rent					

Responsibility for Administration Expense Budget.

This budget is generally prepared by the Secretary or the Accountant, under whose jurisdiction and control most of the expenses are. The period is the same as with other budgets

though apportionments between months (where monthly budgets are prepared) are sometimes a little different from those in the factory, on account of differences in office hours, holidays, etc.

Possible Economies.

It has been mentioned throughout that one of the main aims in budgeting is to obtain the benefit of those economies which an analysis shows to be possible. This budget is no exception. Administrative and office expenses are capable of being lowered through increased efficiency either in human effort or through machines, just as in the case of production and selling. The fact that this question has not received in the past the attention which it deserves makes it necessary to stress again the importance of creating standards and analysing operations so that there will be no lag in attaining maximum efficiency. (See Figure No. 35.)

THE FINANCIAL OR CASH BUDGET

Its Objects.

While it is largely dependent upon the information shown in the other budgets, the cash budget is somewhat different from most of them. Indeed, in some ways it can be likened more to the plant and equipment budget than to any other. It is designed to calculate and set forth in easily interpreted terms the position of the cash resources of the concern month by month or for any other time decided upon. The value is, of course, greater in some cases than in others, but its worth is sufficient at any time to make it a valuable adjunct to other budgetary statements. In the case of the borrower it is necessary to ensure that the cash position will allow loans to be repaid promptly on maturity dates, whilst maintaining sufficient cash resources for trading purposes. When not a borrower, the position should be frequently inspected to determine when, in what amounts, and for how long, excess funds may be loaned out or invested in some other way or used for expansion, and also to make sure that the cash position is at no time detrimentally affected. It is always desirable to maintain a proper relationship between cash and other balance sheet items, and at the same time permit prompt payments and the ordinary policy of the concern to be prosecuted. It must also be remembered that good budgeting, designed to facilitate the flow of cash, can increase the volume of business possible, without any corresponding increase in working capital. It helps the cash position to aid working capital to do more work. Aspects of this matter are dealt with more fully in connection with the operating capital budget.

Effect of Seasonal Conditions.

The need for the cash budget often becomes imperative, the most important example being found in the organisation carrying on business of a seasonal or otherwise fluctuating kind. In such cases there is frequently a very heavy drag in actual receipts and a long period between the completion of a large portion of the manufacturing processes or a large volume of completed production and the actual receival of moneys for the sale of such stock. This is the more so where, because of the desirability of evening up the manufacturing processes throughout the year, portion of the stock, though subject to seasonal conditions, is actually manufactured some months before the demand for such becomes evident. Unless the cash resources of the company are very large, it is frequently found necessary to arrange for certain accommodation over the productive period, with repayments when collections commence to make their appearance.

The Budgetary Period.

The actual period which the budget should cover depends entirely upon the internal affairs of the organisation. Those concerns operating on comparatively small cash margins often find it advisable to plan their cash budgets in anything from thirty- to ninety-day forecasts, with special subsidiary weekly or ten-day periods making these up, and with a general forecast covering the ordinary budgetary period. In those cases where there are ample (and sometimes excess) funds available, the period of the cash budget largely corresponds with the period already adopted throughout as governing the other budgets. Thus, if all figures have been prepared on a six-monthly period, the cash budget would probably be set up for this length of time also, but in addition it would show the position at the end of each month.

Responsibility for Preparation.

The financial budget is generally prepared either by the accountant or the secretary, and is submitted to the general manager before being sent to the budget officer. Sometimes this latter official prepares the budget. If any changes are made in the other budget figures, the effect of such alterations will be reflected in changed financial results, and the cash budget will be amended accordingly.

Preparing the Budget.

In order to prepare a cash budget all factors affecting the cash position must be taken into account. The other budgets

will provide much information which will be necessary, but not all. For example, in the sales budget the turnover month by month will have been estimated and therefore it would be known that during the month of January it was expected to sell, say, £10,000 worth of goods, in February £15,000, and in March £20,000. As far as the cash budget is concerned, however, these figures are useless until they are converted into amounts and dates of expected cash receipts. It would be necessary to know just when the £10,000 worth of book debts resulting from the January sales would be paid. In order to arrive at this and similar conclusions, past practice is the main guide available. What has happened in the past is likely to be the case in the future, unless exceptional circumstances play a part. Probable conditions during the budgetary period should be taken into account and all financial trends carefully noted. One of the requisites for arriving at accurate information is some preliminary market research directed particularly from the standpoint of general credit. In an agricultural community obtaining payment for its produce in the main, say, twice yearly, an organisation the sales of which are mainly of an agricultural kind must, of necessity, pay the greatest attention to collections during those periods when payments are received by the farmer. It may well be that the collections for two months will outweigh the other ten. The proportion of collections to sales, of collections to sundry debtor totals, and of the drag in the collections of accounts either after the date of being incurred or the date of becoming due, will give valuable information for gauging the probabilities in the future. The actual preparation of the budget must cover the following—

1. Forecasting receipts.
2. Forecasting disbursements.

Forecasting Receipts.

The main sources of revenue will usually be found to be—

1. Cash Sales.
2. Book Debt Collections.
3. Receipts covering Interest, Dividends, Rent, Commissions.
4. Bank Loans.

The estimate of cash sales can usually be made by reference to past figures. The amount collected in previous years is often helpful, as is also an examination of the ratio between cash sales and book debt collections. A comparison of this with the ratio shown by the budget figures will act as an excellent check on both estimates.

In forecasting collections of book debts, month by month, the following methods can be adopted—

1. The accounts can be divided intc various credit classes, and a percentage of each can be taken month by month as the amount expected to be paid.
2. A percentage of the monthly sales can be assumed as being the amount of the monthly collections.
3. The same amount of book debts can be assumed throughout. Thus the amount of the collections would be easily calculated by reference to the amount of sales.
4. The collection possibilities of each account can be examined and the total probable receipts derived from such an analysis.

Generally the first method gives reasonably accurate results, without making the preparation of the budget over-laborious. Of course, whichever method is adopted, the terms under which sales are made must be taken into account. Some goods may be sold on demand draft, some on 30 days, and some on 60 or 90 days. Similarly, special factors must be examined. If the business was carrying on certain works under contract and the progress payments were large, it would be necessary to calculate when such payments could be collected.

Interest, Dividends, Rents and Commissions can generally be estimated by analysing the figures of the previous periods and then proceeding to ascertain any factors which may have lately altered such revenue.

The necessity for a bank overdraft, either temporary or of a permanent nature, can usually be calculated from the position as disclosed by the other figures in this budget. If it is required only for temporary relief, the budget will probably show when repayment can be effected.

Frequently when standards are used to predict cash collections, they are afterwards used to control these matters. Thus, a standard turnover rate is often calculated. For example, if the average amount of book debts during a month is £70,000, and the average daily sales were £2000, the turnover would be thirty-five days; that is, there would be thirty-five days of sales uncollected. If this was used as the basis for the budget it would be advisable to make the thirty-five days a standard rate with a view to redoubling efforts if any tendency to increase this time became apparent.

Forecasting Disbursements.

The basis for forecasting disbursements, whilst sometimes a difficult matter, often becomes largely a matter of orderly arrangement. The items for which cash is required are—

1. *Production Costs.*

(a) *Costs of Raw Materials.*

This amount can be procured by reference to the purchase budget, which would set forth the totals of purchases and the dates when such purchases would be made. Reference to that department would also yield information regarding terms of payment, thus enabling the totals payable each month to be calculated

(b) *Costs of Labour.*

Where the labour budget shows the number of employees to be engaged in productive labour, the total amounts to be provided week by week, or month by month, can be obtained. Where a payroll budget is prepared to cover wages payable to all sections of the business, the problem is even more simplified.

(c) *Manufacturing Expense Costs.*

The estimates covering cash required and the dates when such finance must be available are generally obtained from the manufacturing expense budget and the repairs and maintenance budget. Care must be taken that such items as depreciation are not treated as being a cash outlay, but provision must, of course, be made for any new plant and equipment that is to be purchased. Full details can be obtained from the plant and machinery budget, but terms of payment may be the subject of special inquiry from the plant engineer, works manager or purchasing agent.

2. *Selling Costs.*

(a) *Selling Expense.*

This would cover such items as salesmen's salaries and travelling expenses, and the amount of cash to be provided would be obtained from the selling expense budget.

(b) *Advertising Expense.*

This would, of course, come from the advertising budget, but calculations allowing for terms of payment in relation to advertising space and contracts would have to be made so that the periodic cash requirements would be known.

(c) *Shipping and Transportation Expense.*

The budget covering these items would provide the necessary information for the financial budget.

3. *General, Administrative and Financial Expenses.*

Most of these items would come from the administrative expense budget. An analysis of each item would be necessary in order to translate the expense figures into a cash figure and to allow the latter to be placed correctly in the various periods affected.

Essentials for Successful Financial Budgeting.

The degree of accuracy and therefore success attending the preparation of this budget will largely depend upon the co-operation extended to the official responsible for its preparation by the various departments of the business. It must be remembered that certain figures may be required from a cash standpoint, though they were not necessary from the standpoint of expense, and the secretary or accountant would be largely in the hands of the departmental controllers for the information required.

FIGURE No. 36.

BUDGET OF SEASONAL PURCHASES SALES AND COLLECTIONS.

Month Ending	Purchases	Cost of Sales	Added to Stocks	Sales: Gross Profit	Sales: Rec. at Cost	Sales: Collections	Sales: Bills Receivable
	£	£	£	£	£	£	£
As at 1st Jan.	0	0	0	0	0	0	0
Jan. 31st ..	0	0	0	0	0	0	0
Feb. 28th ..	1250	0	1250	0	0	0	0
March 31st ..	2500	1250	2500	625	1250	0	1875
April 30th ..	1750	2500	1750	1250	2500	0	5625
May 31st ..	750	1750	750	875	1750	0	8250
June 30th ..	0	750	0	375	750	1875	7500
July 31st ..	0	0	0	0	0	3750	3750
August 31st	1000	0	1000	0	0	2625	1125
September 30th	3000	1000	3000	500	1000	1125	1500
October 31st	3250	3000	3250	1500	3000	0	6000
November 30th	1750	3250	1750	1625	3250	0	10875
December 31st	0	1750	0	875	1750	1500	12000
January 31st	0	0	0	0	0	4500	7500
February 28th	1250	0	1250	0	0	4875	2625
March 31st ..	2500	1250	2500	625	1250	2625	1875
April 30th ..	1750	2500	1750	1250	2500	0	5625
May 31st ..	750	1750	750	875	1750	0	8250

Care and attention must be given to the translation of the expense figures into cash necessities, by taking into account the terms of payment.

The financial budget should be prepared in such a fashion as to make possible a complete survey of the cash position of the business at any time and to give notice of the requirement of extra resources some time before they must actually be provided. The financial budget that does not do this destroys its utility value. (See Figures 36 and 37.)

FIGURE No. 37.

FINANCIAL BUDGET.

Date	Purchases £	Accounts Payable £	Payments on A/c £	Balance of Accounts Payable £	Collection Receipts £	Expenses £	Bank Loans Credit £	Repayment Bank Loans £	Balance Bank Loans £
Jan. 1st	0	0	0	0	0	0	0	0	0
Jan. 31st	0	0	0	0	0	0	0	0	0
Feb. 28th	1250	1250	0	1250	0	0	0	0	0
Mar. 31st	2500	2500	0	3750	0	625 (6)	625 (4)	0	625
Apr. 30th	1750	1750	1250 (5)	4250	0	1250 (6)	1250 (4)		
							1250 (5)	0	3125
May 31st	750	750	2500 (5)	2500	0	875 (6)	875 (4)		
							2500 (5)	0	6500
June 30th	0	0	1500 (7)	1000	1875	375 (7)	0	0	6500
July 31st	0	0	1000 (7)	0	3750	0	0	2750 (2)	3750
Aug. 31st	1000	1000	0	1000	2625	0	0	2625 (7)	1125
Sep. 30th	3000	3000	0	4000	1125	500 (7)	0	625 (2)	500
Oct. 31st	3250	3250	1000 (6)	6250	0	1500 (6)	1500 (4)		
							1000 (5)	0	3000
Nov. 30th	1750	1750	3000 (6)	5000	0	1625 (6)	1625 (4)		
							3000 (5)	0	7625
Dec. 31st	0	0	2625 (6)						
			625 (7)	1750	1500	875	2625	0	10250
Jan. 31st	0	0	1750 (7)	0	4500	0	0	2750 (7)	7500
Feb. 28th	1250	1250	0	1250	4875	0	0	4875 (7)	2625
Mar. 31st	2500	2500	·0	3750	2625	625	0	2000 (2)	625
Apr. 30th	1750	1750	1250 (5)	4250	0	1250	1250 (4)		
							1250 (5)	0	3125
May 31st	750	750	2500 (5)	2500	0	875	875 (4)		
							2500 (5)	0	6500

1. See Figure No. 36 for Collection Programme.
2. Funds available for repayment after expenses.
3. Expenses at same rate as Gross Profit.
4. Bank Loans made to carry expenses for month.
5. Bank Loans made for paying Accounts Payable.
6. Borrowed from Bank.
7. Collections from customers.

THE OPERATING CAPITAL BUDGET

The operating capital used in a business plays a very large part in deciding the state of the cash position. Actually the amount of money expended from the commencement of a concern till the receipt of the first payment from a customer represents the original amount of operating capital employed. It later, of course, fluctuates considerably, but it will be frequently found that stern measures are necessary to promote any appreciable permanent shrinkage in the total amount.

The main factors affecting the total necessary operating capital are—

1. *The value of the manufacturing units and the scale of production.*

Where a concern is gradually extending to a more valuable type of product, more capital will be required. Similarly, where turnover is being increased there would be more capital continually employed, unless there were some compensating factors.

2. *Fluctuations in sales, or the rate of employment.*

Seasonal business plays a big part in the effect upon capital. Prior to the main selling season stocks are likely to be heavy and extra capital will probably be needed. This state of affairs would continue until the sales have been made and the debts are beginning to be collected. Similarly, where the state of the market causes alterations in the rate of employment, capital is affected.

3. *The "Turning-out" time of the product.*

Products which take a long time to process naturally need more capital (other matters being the same) than those which can be pushed quickly through all the manufacturing processes. For example, where a product can be completely manufactured in two days, and by various speeding-up methods the time is reduced to one day, there should be a considerable saving in capital. Naturally the question of sales enters into the problem also, as it would be foolish to have the manufacturing processes turning out products more quickly than sales are possible. The longer the turning-out time the larger the amount of material in process, and therefore the higher the amount of capital requirements, because of the higher accumulated materials, wages and expenses. The question of the turning-out time brings into account other matters, such as—

(a) The economical amount of plant and machinery necessary to preserve the balance between quick and efficient manufacture consistent with the economical use of extra capital involved.

(b) The routing of the work in the most efficient and speedy manner possible. This involves the saving of time and labour in transportation.

(c) The weighing of those factors affecting the "economic lot" in manufacturing, having in mind the quantities produced and setting-up times.

4. *The relationship between stores and capital requirements.* This matter was dealt with when examining the materials budget. Attention paid to the amount of raw materials on hand and partly or wholly finished stocks will have an effect on total capital required.

5. *The immediate reconciliation of the manufacturing programme with selling results.*

This is necessary in order to keep these matters co-ordinated. If a fall in sales becomes apparent and no alteration in manufacturing programmes is made, extra stocks will soon accumulate, and the amount of capital required will either increase or will not be reduced as may otherwise be the case.

6. *The amount and length of credit.*

This is a most important factor. At times the state of the market or existing competition may force even an unwilling manufacturer into giving long terms, or terms which are longer than usual. Capital is thus tied up in book debts, and extra capital may have to be provided.

7. *The terms of purchases.*

Some purchases of materials may be made on demand drafts, others on 7, 10, 30, 60 or 90 days' terms. The proportion of the purchases falling within these limits will affect operating capital required. It is possible, for example, for a business to make its purchases on 60 days' terms and to sell at 30 days. Its necessary capital would therefore be greatly reduced, if the arrangement could be regarded as a permanent and stable one.

That each business should endeavour to economise intelligently on capital requirements needs little explanation. £10,000 profit on £50,000 capital is a 20 per cent return, but if the capital actually required is only £40,000, or, to put the matter in another way, if a competing firm was obtaining exactly the same results from a capital of £40,000, then the 20 per cent return becomes a 25 per cent return. The business which has a high capital turnover is at an advantage because it keeps its resources working at high speed. In other words, its capital produces more in a given period of time.

The budget must provide on the one hand for disbursements of capital, and on the other for sources of capital. These two elements must balance in the same way as two sides of a ledger balance.

Dr Ludwig in an address before the International Management Institute at Geneva in 1930 laid down certain prin-

ciples to be observed in budgeting for operating capital as follows—

"The ways and means of releasing capital vary according to whether we are dealing with manufacturing, stocks, sales or outstanding debts. We think, however, that it is possible to lay down certain principles which apply to all sides of an undertaking and which ought to be observed as essential to scientific management.

1. The responsible departments of the undertaking must be taught to reckon *in terms of capital.* The clerk in the supply specifications office, who orders materials from suppliers, must understand that he is controlling capital. The engineer in the works office who puts a new lot into process must realise that he is tying up fresh capital. The sales manager of a sales agency who sees his stock of a particular article mounting up must not forget that the capital requirements of the undertaking as a whole are rising accordingly. It is all a question of training. The idea must be introduced into the organisation, its significance clearly instilled into each individual and its execution constantly insisted upon.

2. The call on capital must be rendered *visible.* Operating capital accounts must be balanced daily and submitted to the financial director and the works and sales managements. The order cards of the works office must indicate not only quantities, but values. The trend of stock, the trend of materials in process, must be charted by figures and curves showing values. All those drawing on capital—works superintendents or sales managers, heads of departments in the factories and at branches—must be kept continually posted as to the extent of capital they are using.

3. For manufacturing, selling and administration as a whole, and also for each separate department, *maximum capital requirements limits* must be laid down. In other words, each department must be assigned its capital budget, a budget which may vary periodically with the activity of the department, but will remain fixed in scale on the basis of the considerations already explained. Where only provisional estimates are in question, the ledgers will furnish sufficient data, but for the definite establishment of the budget, the computation of each item of requirement will be necessary. The sum of the sectional budgets will constitute an operating capital budget for the undertaking as a whole.

4. The call on capital from each individual department must be supervised; capital budget and actual capital requirements must constantly be checked one against the other. This checking is the function of the finance department. The capital *that has been passed by it* will be made available to the depart-

ment in question either free of interest, or at a nominal rate of interest to be calculated in the undertaking. Any excess over the figure budgeted will be penalised with heavy interest charges and the result will be an increase in the expense of that particular department Such measures will be found effective, and will appear as an object lesson to the responsible parties."

Even though there may be no desire to adopt the plan set forth by Dr Ludwig, the foregoing gives some excellent ideas on how the amount of capital required can be checked and controlled. There can be no doubt that particularly in certain organisations, if some care and attention were devoted to economies in capital, just as economies in expenses are rigidly followed through, very large savings would be made. Unfortunately, as in most things, there is a good deal of conflict in some of the measures which can be adopted in the control of capital. Savings which can be made in one direction are found to conflict with savings in another. Where capital can be saved by carrying out a certain line of action, it is frequently found that this alteration would result in a loss of savings in another. Typical examples of cases where there is conflict are—

1. *Capital economy as opposed to security.*

The use of capital may be conserved by decreasing stocks, but such a practice may also have the effect of increasing the risk of stoppages. If no reserve of stock is carried, production may be held up through failure of suppliers to forward further supplies.

2. *Capital economy as opposed to savings.*

While it may be possible and under ordinary circumstances desirable to have only small stocks of certain materials on hand, price concessions for quantities which the business could well absorb during a reasonable period, may be so attractive as to make the higher quantity the economical purchase. Similarly, because of proportionately large "set-up" costs, it may be economical to make a comparatively large number of a certain part, even though the manufacture of such a quantity is opposed to capital economy.

3. *Capital economy as opposed to service.*

It is possible to push economies so far that insufficient stocks are carried, and this may lead to delays in deliveries to customers. Decreases in stocks being carried may conserve operating capital, but may destroy customer service.

4. *Capital economy as opposed to manufacturing routine.*

In order to safeguard the routing of work and the efficient control of manufacture, capital economy may have to be sacrificed. Extra machines may have to be purchased in order to avoid dislocation, or extra stocks of an article may have to be

turned out so that the machine responsible can be turned to other work for a lengthy period.

It will be recognised from the foregoing that the question of the operating capital budget can be an extremely complicated one, and, without in any way denying its value, most concerns will probably find that the wisest plan is to exercise partial control. The foregoing will show what has to be done to make the control complete, but excellent results can also be obtained by watching certain important factors. In the case of the manufacturing of machines each consisting of a large number of parts, for example, it would be necessary to work out the economic lot quantity in relation to each individual part, taking note of the setting-up times, savings that can be made, and resultant stocks, the most economical routing of work and use of machines, and the completion of each part and the machine as a whole, in minimum time and at minimum cost. Sales estimates, too, would play their part, and would have to be analysed with a view to ascertaining the trend of sales, the result of seasonal inclination, the length of credit given on accounts, the state of credit, and the possibilities of ultimate bad debts.

The exact procedure to be adopted is therefore a matter for individual judgment. That savings can almost invariably be made can be taken for granted, as can also the fact that in many cases the savings may be considerable. At the same time, in some cases it may be advisable to restrict the budget to cover certain important parts, without making a complete budget. Where there is a shortage of capital, a budget of this kind very often offers an effectual remedy. Where there is, or has been, an extravagant use of capital, the preparation of a budget may provide the necessary solution.

It will frequently be found that much of the data required for the completion of this budget will have already been obtained in the preparation of the other budgets. It may therefore be possible to complete the capital control figures, either completely or to cover the main essentials, with practically no extra work.

This matter of the control of capital is one which has received little of the attention and study that it has deserved. Capital must earn its interest, and the extravagant use of capital places an extra burden on that portion which is really the essential amount in the earning of profits. The example given at the beginning of this chapter, showing the difference between the 20 per cent return and the 25 per cent, is a case in point. Either capital can be saved, or, alternatively, the necessity for borrowing money either permanently or to tide over a particular season, may be avoided or minimised.

The relationship existing between the Operating Capital Budget and the Financial Budget can now be more easily gauged.

THE PROFIT AND LOSS ACCOUNT AND BALANCE SHEET

Completion of Final Estimates.

When the budgetary procedure outlined in the foregoing pages has been carried out, it becomes possible to prepare an estimated profit and loss account and estimated balance sheet which will show the position as it would appear at the end of the budget period if the whole of the transactions budgeted were realised in total. Previous experience, of course, makes it possible to have some idea of whether the results of the proposed selling and manufacturing programmes would yield satisfactory results, but only by the preparation of an estimated profit and loss account and balance sheet can the situation be analysed to a satisfactory degree. It has been the custom in the past for many businesses practising budgetary control not to complete these final statements, while some concerns complete an estimated profit and loss account, but do not prepare an estimated balance sheet. Where the figures are available and the method of preparation allows them to do so, some enterprises prepare forecasts of gross profits for each product, main product or group of products, as it is generally considered that the highest degree of control can then be exercised. Operating profits are also given in similar detail, an analysis of marketing and administrative expenses making this possible.

The various methods used may therefore be divided into—

1. Unbalanced forecast methods.
2. Balanced forecast methods.

Both of these, of course, aim at arriving at the estimated profit or loss for the period, but only in the second case are the figures taken through to their logical conclusion, the estimated balance sheet. The estimated profit and loss statement is usually in the ordinary form, the information coming from the various budgets which have been prepared. Thus estimated figures covering net sales, inventories, purchases, labour and expenses would be entered. Sometimes the estimated cost of sales would be prepared in the standard form, whilst at others it would be computed by multiplying quantities sold by standard costs per unit, or the average of standard costs per group of units. Sometimes both methods are used, the one checking the other, and one being treated as the ordinary profit and loss account.

Occasionally, where a company is dealing in an exceedingly large number and variety of products, an estimated profit and loss account is prepared by using a pre-arranged percentage of net sales. Where this is done no attempt is made to estimate balance sheet figures, or asset and liability ratios. This would probably only be used in cases where no serious attempt to prepare the various budgets has been made. Where balanced forecasts of a profit and loss account are required, a start is made with the balanced budgetary statement of the company's financial position and then through debits and credits the budgeted forecasts for the period are examined, and the resultant balances obtained in ordinary bookkeeping style. In this way the assets can be traced through to a properly prepared balance sheet.

Advantages of Completing Estimates.

The following are the advantages to be secured by preparing a profit and loss forecast—

1. This, together with the estimated balance sheet, represents the logical conclusion of the budget system and presents in effective form the results which can be anticipated from the budgetary programme.
2. It makes possible analyses of results which affect the business as a whole and allows judgment to be passed upon the effects of budgetary policy.
3. It gives a combination of budget figures readily understandable by the management, and valuable as a management tool.
4. It is the prelude to the preparation of the balance sheet which makes possible balanced asset and liability forecasts.

Relationship with the Balance Sheet.

The estimated profit and loss account and the estimated balance sheet are largely supplementary, even though the latter cannot be prepared without the former. The profit and loss account, of course, sets forth the results for the period in terms of gain or loss on transactions and the balance sheet shows the effect which operations during the period have had upon the assets and liabilities of the business. The one is concerned with the effect upon revenue, upon income and expense, and the other with assets and liabilities, particularly ownership.

Procedure to be Adopted.

The procedure necessary to complete the estimated profit and loss account is as follows—

1. *The Cost of Sales Statement.*
   (a) Opening inventory.—This figure would be obtained from the materials budget
   (b) Purchases would be taken from the purchases budget.
   (c) Direct and indirect labour would be shown in the labour budget.
   (d) Manufacturing expense.—This would be obtained from the manufacturing expense budget and the repairs and maintenance budget. Purchases and stores expenses may be obtained from the purchases expense and stores expense budgets, or they may have been included in the administrative expense budget.
   (e) Closing stocks would be calculated from the materials budget both in relation to raw materials and finished goods—
      1. Raw materials closing inventories. These could be calculated by adding to the opening inventory the goods to be purchased during the period and deducting the amount to be used in production.
      2. Goods in process closing stocks. Here the opening inventory could be taken and added to it would be the amount of materials and supplies to be used in production, plus the estimated amount of direct labour and manufacturing expense, less the estimated cost of production to be finished during the period. (The latter is obtained by multiplying by unit costs the estimated quantities which the production schedule shows will be finished over the period.)
      3. Finished goods closing stocks. This could be obtained by adding to the opening inventory the estimated cost of the products finished during the period, less the estimated cost of sales, this latter being the amount of sales in units multiplied by unit costs.
2. *The Profit and Loss Statement.*
   (a) Sales. This figure would be obtained from the sales budget, returns and allowances being estimated in accordance with percentages on sales shown in previous years.
   (b) Marketing expenses. These would be obtained from the selling expense, advertising and shipping and packing budgets.

(c) Administrative and general expense would be available from the administrative expense budget.
(d) Other income would be calculated by reference to the financial budget.

It is generally advisable to prepare proper accounts to record in total the various items affecting the profit and loss account and balance sheet. Thus, budgeted sales would be debited to Sundry Debtors and credited to Sales. Purchases would be debited to Materials Account and credited to Sundry Creditors. Direct Labour would be debited to Labour in Process and credited to Wages due. The various items affecting cash would also find their way into these accounts, e.g. cash receipts from book debts would be debited to Bank Account and credited to Sundry Debtors. Receipts of dividends, rents, etc. would be debited to Bank Account and credited to Other Income Account. This would mean that both the estimated profit and loss account and the estimated balance sheet could be prepared in accordance with usual accounting procedure. (See Figures 38, 39 and 40.)

Advantages of Preparing a Balance Sheet.

Many organisations which are enthusiastic supporters of budgeting do not prepare a balance sheet. The reasons against its preparation are generally given as being—

1. Its utility is confined to exercising some check upon the accuracy of the other budget forecasts and to indicating probable balance sheet ratios.
2. Where the budget forecasts represent rough forecasts subject to revisions, the forecasted balance sheet is of no practical value.

Those organisations in favour of preparation give as reasons in favour, practically the opposite of the foregoing—

1. It can be used as a basis for checking the accuracy of the various other budget forecasts.
2. It enables an examination of various balance sheet ratios to be made, and gives an opportunity to correct any adverse trends.
3. It helps to determine (together with the financial budget) what loans are likely to be needed and for what length of time.

It should be remembered that the financial history of a business is set forth in successive balance sheets and much may be learned from a statement showing the expected position at the end of the budgetary period. In any balance sheet there is always room for a difference of opinion as to assets and liabilities. The question of depreciation, depletion and obsolescence are generally the subjects of estimates only. Sometimes the application of conservative accounting principles

FIGURE NO. 38.

COSTS OF SALES STATEMENT.

Particulars	July Budget £	July Actual £	July Difference £	August Budget £
Sales	33,045 0 0	32,169 13 0	**875 7 0**	35,325 0 0
Less Freights	200 0 0	201 7 0	1 7 0	215 0 0
Total	32,845 0 0	31,968 6 0	**876 14 0**	35,110 0 0
Less Cost of Sales	23,824 11 6	23,282 0 0	**542 11 6**	25,376 6 2
Gross Profit	9,020 8 6	8686 6 0	**334 2 6**	9733 13 10
COST OF GOODS SOLD.				
Stocks on Hand at beginning				
Raw Materials	46,325 0 0	46,325 0 0		47,860 17 2
Leaf in Process	3500 0 0	3500 0 0		3500 0 0
Manufactured Tobacco	31,825 16 8	31,825 16 8		33,606 17 4
Purchases of Raw Materials (including Buyers' Sals., Commissions, etc.)	10,363 4 8	9940 15 11	**422 8 9**	5476 18 3
Manufacturing Wages	1647 8 7	1676 2 0	28 13 5	1733 14 8
Manufacturing Expense	468 9 9	456 5 2	**12 4 7**	479 10 2
Repairs and Renewals	38 3 0	42 1 10	3 18 10	38 8 0
Excise	14,624 3 4	14,428 1 10	**196 1 6**	14,720 0 0
Total	108,792 6 0	108,194 3 5	**598 2 7**	107,416 5 7
Less.				
Stocks on Hand at End				
Manufactured Tobacco	33,606 17 4	33,872 13 5	265 16 1	34,111 2 10
Raw Materials	47,860 17 2	47,539 10 0	**321 7 2**	44,428 16 7
Leaf in Process	3500 0 0	3500 0 0		3500 0 0
Cost of Sales	23,824 11 6	23,282 0 0	**542 11 6**	25,376 6 2

Figures in heavy black type indicate budget greater than actual.

FIGURE No. 39.

ESTIMATED P. & L. A/c. For Period Ending ....

	Estimated for Period		Last Period	
	Amount	% on Sales	Amount	% on Sales
To Selling Exs.	£		£	
Salesmen's Sals.	2,500	1·25%	2,500	1·32%
„ Trav. Expenses ..	1,850	·92	1,950	1·02
Freights and Cartages	4,420	2·21	4,350	2·29
Advertising	2,500	1·25	2,500	1·32
Commissions	1,250	·63	1,400	·74
Total Selling Expenses	12,520	6·26%	12,700	6·69%
To Admin. and Gen. Expenses				
Salaries	8,300	4·15	8,700	4·58
Telephones..	125	·06	130	·07
Postages and Telegrams ..	80	·04	75	·04
Bad Debts	450	·23	500	·26
Audit Fees	80	·04	80	·04
Office Expenses	120	·06	130	·07
Printing and Stationery ..	60	·03	80	·04
Other General Expenses	240	·12	300	·16
Total Admin. and Gen. Expenses	9,455	4·73%	9,995	5·26%
Total Expenses	21,975	10·99%	22,695	11·95%
Gross Profit	42,450	21·23%	43,100	22·69%
Net Profit	20,475	10·24%	20,405	10·74%

Figure No. 40.

ESTIMATED BALANCE SHEET.

Liabilities	As at 31/12/1935		Est. at 30/6/36	
	Amount	Ratio	Amount	Ratio
Capital	165,000	63·46%	165,000	66·%
Reserves	27,000	10·38%	30,000	12·%
Profit and Loss	15,000	5·77%	15,000	6·%
Total Capital Funds	207,000	79·61%	210,000	84%
Sundry Creditors				
On Open Account	43,000	16·54%	38,000	15·2%
„ Bills Payable	8,000	3·08%		
Accrued Expenses	2,000	·77%	2,000	·8%
	53,000	20·39%	40,000	16·%
	260,000	100· %	250,000	100·%

Assets	As at 31/12/1935		Est. at 30/6/36	
	Amount	Ratio	Amount	Ratio
Land and Buildings	40,000	15·39%	38,000	15·2%
Plant and Machinery	60,000	23·08%	65,000	26·%
Loose Tools	3,000	1·15%	2,500	1·%
Motor Lorries, Cars, etc.	7,000	2·69%	5,500	2·2%
Total Fixed Assets	110,000	42·31%	111,000	44·4%
Stock	80,000	30·77%	72,000	28·8%
Sundry Debtors				
On Open Account	48,000	18·46%	45,000	18·%
„ Bills Receivable	11,000	4·23%	12,000	4·8%
„ Prepaid Amounts	2,000	·77%	2,000	·8%
Cash at Bank	9,000	3·46%	8,000	3·2%
Total Current Liabilities	150,000	57·69%	139,000	55·6%
	260,000	100·%	250,000	100·%

would mean considerable differences in asset values. The fact that there will always be some margin of error in the estimated balance sheet therefore is not a very serious argument against its preparation.

In connection with the second factor against the preparation of the balance sheet, the example of the company whose business depends upon weather and crops is frequently given. It is stated that under some conditions an attempt to forecast the profit and loss account and balance sheet for a year in advance is a waste of time and likely to be more misleading than otherwise. In such cases, however, there are still two alternatives available—

1. To begin the year with tentative operating budgets, making no attempt to forecast the final statements until later in the year, when it is felt that the previously unknown factors are beginning to take shape.
2. To prepare all the necessary budgets, together with the profit and loss account and balance sheet, but covering a short period, such as, for example, three months.

Mention was made when dealing with the profit and loss account of the method to be adopted in preparing the balance sheet, and there is no necessity for further examination of the individual items of a balance sheet.

Analysis of Final Statements.

When the final statements are prepared it is possible to conduct a critical survey of the whole of the proposed operations for the coming year. The first item to demand attention will naturally be the net profit shown, and a decision can be made as to whether this is a satisfactory figure. Ordinarily, of course, the profit should be sufficient to pay the necessary dividend and to provide some contribution towards reserves. It would not be possible to stipulate the amount of the dividend because each business within each industry must decide this for itself. In certain cases a 15 per cent dividend would be considered almost unsatisfactory, whilst in others a 4 per cent dividend might be termed a particularly good one. Naturally, in the consideration of the profit which is being realised, past results would have to be taken into account, because under ordinary circumstances some increase of net profit could be reasonably expected. Furthermore, if the trend of the net profits over a period has shown an approximate increase each year, it is only fair to expect the coming year at least to show the same increase.

The Importance of Ratios.

Even though the profit position is satisfactory, however, it is possible that the balance sheet figures may not be so. While the position can often be reasonably well gauged by an ordinary examination of what is shown, the only scientific manner of analysing and dissecting is through the use of ratios. There have been compiled long lists of these pertaining to the various functions of each business. They are not confined to the balance sheet, and where complete budgetary figures are available it is advisable to examine such in the light of the results which a ratio examination discloses. The following ratios are probably the most important—

RATIOS

In the following ratios the terms used may be defined as under—

Current Assets	All assets covered by realisation within one year.
Current Liabilities	All payments due within one year, including current payments on long dated loans.
Working Capital	The difference between current assets and current liabilities.
Operating Assets	Total of all assets except those not used in operating (e.g. securities, unused plant).
Fixed Assets	Land, plant and machinery, permanent securities—also intangible assets, such as goodwill. This latter would be omitted in ratios developed on a tangible asset basis.
Plant Assets	Total of book values of land, buildings, machinery, etc., less reserves.
Net Profit	Profit after deduction of taxation due.
Tangible Net Worth	Excess of assets over liabilities, less goodwill, etc.
Collection Period	Number of average days' sales represented by Sundry Debtors and Bills Receivable.

The following are the most important ratios—

Current Assets to Current Liabilities.

No fixed safe limits can be given, as each business must be treated separately. It is a measure of the margin of safety avail-

able to creditors, but it is not a complete measure. An increase shows a greater proportional margin of assets available for payment of creditors, but it may be due to a change in both assets and liabilities without any change in net working capital It may therefore at times be necessary to consider the following additional ratios—

Cash and Sundry Debtors to Current Liabilities.
Stock to Current Liabilities.
Working Capital to Stocks on Hand.
Working Capital to Total Assets.

Sundry Debtors (including Bills Receivable) to Stocks.

This ratio is designed to show the conversion of stocks into sales, and it may be an important factor in the Current Assets/Current Liabilities ratio. The conversion adds the amount of the profit on the sale to the assets without any corresponding increase in liabilities.

The ratio would be increased by—

1. A more effective sales policy.
2. Sales on long credit to stabilise production.
3. Forcing sales or slowing down production just before stocktaking.
4. More effective routing, thus reducing stocks.

The ratio would be decreased by—

1. Better collections.
2. Manufacturing for stock in dull periods.
3. Larger purchasing on account of rising prices.

Net Sales to Average Monthly Stocks.

This measures merchandising effectiveness. An increase shows better merchandising policy and as a rule is an advantage tending towards minimising surplus or obsolete stocks.

Other ratios valuable in this connection are—

Raw Materials Used to Raw Material Stocks.
Finished Goods to Goods in Process.
Cost of Goods Sold to Finished Goods.

Net Sales to Sundry Debtors (including Bills Receivable).

This measures the effectiveness of the collection policy, though it does not disclose the existence of doubtful debts. An increase shows better collections and helps towards obviating bad debts. The collection period ratio is frequently used in this connection—the number of days' sales represented by Sundry Debtors.

Net Sales to Operating Assets.

This is a measure of the sales productivity of the money invested and an increase shows a greater turnover on the assets used. Sometimes an asset such as goodwill is eliminated from the total of the operating assets.

Net Sales to Operating Plant Assets.

This shows the sales productivity of the amount expended upon plant, etc. and an increase is always desirable as showing a greater turnover from the plant. This increase can come either from increasing sales or reducing plant without a corresponding reduction in sales.

Net Sales to Plant Expense.

This is useful as a check upon the fixed charges in relation to operations at other than normal capacity.

Net Sales to Working Capital.

A measure of the sales productivity of the amount of working capital in the business. An increase is desirable and shows greater turnover on the working capital, but a very high rate may show over-trading. If the rate is too low the working capital is not being sufficiently used.

Net Sales to Net Worth.

This gives the sales activity of the total funds in the business. If the ratio is too high, the company may be over-expanding or striving for volume, irrespective of profit. Net profit to net sales and net profit to net worth should also be considered in this connection.

Operating Profit to Net Sales.

This measures operating efficiency and economy. It is of greater value than Net Profit to Net Sales, because it limits consideration to operating transactions. An increase shows either increased sales income or reduced cost of sales, or reduced selling and administrative expenses. The improvement may be the result of selling at higher prices, increasing sales more than selling costs, concentrating upon more profitable lines or reduction of expenses.

Operating Profit to Operating Assets.

This sets forth the earning power of money invested in operating assets and an increase is desirable as representing a greater return This increase would generally be the result of improvements in purchasing, manufacturing or selling.

Net Profit to Net Sales.

This measures efficiency and economy, and should be examined in conjunction with Operating Profit to Net Sales. The same factors which affect that ratio would affect this, but in addition any increase or decrease in non-operating profits would also affect this particular ratio.

Net Profit to Net Worth.

This shows the earning power of funds invested in the business. An improvement can be expected only through improvements in economy or efficiency covering purchases, manufacturing or selling, or in methods of financing or investment.

Net Profit to Preferred Share Capital.

This shows the strength or weakness of the position as far as the payment of present and the possibilities of future dividends to the preference shareholder are concerned. An increase would mean a strengthening of the position of shareholders generally.

Net Profit to Ordinary Share Capital.

Generally the most usual method of comparison, this implies deduction of the preference dividend due from the total net profit and relating the remainder to ordinary share capital, this then showing the total return on such.

Net Retained Profit to Net Profit.

This sets forth the proportion of profit left in the business in order to build up reserves or to write off intangible assets.

Net Worth to Total Liabilities.

The relationship between the capital invested and the money owing to creditors is derived from this ratio. An increase is desirable, and will facilitate any necessary easing of debt pressure. Such increase would usually be the outcome of investment of additional capital, net profits retained in the business or the reduction of current liabilities.

Net Worth to Fixed Assets.

This gives the proportion of shareholders' funds invested in fixed assets, and an increase is desirable, as it generally represents more money available for payments to creditors if desired. Improvement can be effected by the sale of fixed assets, increase of shareholders' funds, and the cessation of capital expenditure.

In order to obtain the maximum benefit from these ratios it is advisable to prepare columnar lists setting forth the results of previous years' transactions. An examination of these figures will then show the trends in the case of each particular ratio, and by a comparison of past figures and trends relating thereto it will be easy to judge the results which it is estimated that the budgetary period will show. Discrepancies or variations should be given special attention, so that where necessary, alterations can be made and remedial action taken. Where it is possible to do so, it is always helpful to compare the figures of the concern with those of the industry in general, particularly in relation to trends.

Thorough Analyses Essential.

It has already been pointed out that the fact that the profit as shown is satisfactory does not necessarily mean that the whole of the transactions for the period can be regarded in the same way. It is possible that though the amount of estimated profit is acceptable, operations will result in a balance sheet position showing decidedly unhealthy signs. For example, when the compilation of the sales budget was being considered a strenuous effort may have been made to increase sales, and to do this the selling policy may have been altered to include long-term transactions. This may have resulted in a large increase of book debts and the consequence may be a serious shortage of cash. This position would have been set forth by the financial or cash budget, but the reason for it becomes most apparent only in the balance sheet itself. Similarly, extra expenditures upon plant and equipment may throw the Current Asset/Current Liability ratio out of balance. Only by an analysis of these various factors will a true perspective of the whole position be obtained.

Responsibility for the Work.

Generally the preliminary work in relation to these analyses is carried out by the budget officer, who presents his report to the budget committee. This committee then holds as many meetings as are necessary to examine in detail the budgets which have been prepared, and the final results as calculated therefrom. The departmental executives are consulted and questioned from time to time, where the examination of the figures warrants this course. Where necessary the budgets would be referred back to these officers for amendment. If the final figures show a very disappointing profit, it may be necessary to review the whole position from beginning to end, and revised estimates may be necessary in the case of every budget. Consideration

would also be given by the budget committee to ways and means whereby the profit could be increased, and broad outlines of changes of policy would either be decided upon or recommended for decision to the board of directors, the working out of the details generally being left to the departmental executives.

Revision of the Budgets.

As an example, it may be assumed that the profit for a particular business was too small for the payment of an ordinary dividend and the budget committee or board of directors determined that the figure shown was less than could reasonably be expected and therefore it must be increased. Consideration of the subject may lead to the conclusion that the secret of raising the profit figure lies more in the region of increased sales than in decreased expenses, and concentration may therefore be devoted towards increasing sales. It may be decided at the outset that a larger advertising appropriation is essential, and that this move must be supplemented by the employment of extra salesmen. The sales manager, having received these instructions, would prepare a new sales budget or possibly a supplement to the sales budget already prepared, showing the results estimated in consequence of these changes. This alteration in the sales budget would have its effect upon the whole of the other budgets, and the production manager would make a revision of the whole of his plans to cater for the production of the extra products to be sold. Similarly, materials control would be altered, the labour budget amended, purchase estimates increased, and manufacturing expenses prepared in accordance with the new production schedule. It is possible that office and administrative expenses would be little affected, but the cash position would definitely have to be entirely re-cast in the light of the altered circumstances. The new estimated profit and loss account and balance sheet as then prepared would come before the budget committee, having passed through the hands of the budget officer, and again revisionary measures may be taken by that committee. Any further changes that may be necessary would be made and finally a revised budget could be set before the committee for its final approval. Where desirable this completed budget is placed before the board of directors and their sanction is obtained. In certain organisations it is the practice for the budget to be sent direct by the budget officer to the board of directors, who carry out the functions which have been described as those usually adopted by the budget committee. Very often, when the managing director is chairman of the budget committee, this latter approves of the completed budget, and it then becomes the policy of the concern.

Control.

Attention has now been given to the preparation of complete budgets. These would be prepared and completed, if at all possible, before the commencement of the period covered by the budget, or as soon afterwards as is found practicable. Once the period begins, constant attention should be given to actual results to make sure that the business is being kept as closely as possible to the budget figures. The actual methods of control are considered in the next chapter.

Chapter VI

BUDGETARY CONTROL

What is control—methods of measuring expenses—aids to control—control over sales and marketing expenses—analyses of variations—sales results analyses—marketing expense—selling expenses—stock and production relationships—up to date records—selling expense analysis—advertising expense—shipping and transportation expenses—production control—materials control—purchases control—labour budget—plant and equipment control—monthly authorisation of expenditure—essential projects not included in budget—manufacturing expense control—administrative expenses control—cash budget control—method of comparison—receipts—disbursements—effects of rising turnovers—necessary budget amendments—conclusion.

What is Control?

When used in connection with budgeting, control can be said to consist of three essentials—

1. The definition of the objective.
2. The measurement of progress made.
3. The readjustment process, necessitated by the results of such measurement.

Actually the first of these essentials is provided by the budget itself, which is the objective and the standard with which actual results can be compared. The second factor represents the comparison of the results actually achieved with those shown in the budget. Guiding posts reach their greatest value only when heeded, and budgets are of most help when notice is taken of what they portray and of the differences between that portrayal and the actual results. To prepare a budget and then forget what it contains is to minimise the help and guidance it can give. Hence the second step—the valuable exercise of comparison. As a result of analysis and comparison of results with anticipations, the third step becomes necessary—the provision of remedial action. The readjustment process may take various forms according to the particular circumstances, but as a general rule, the more promptly it is instituted the better for the business.

The definition of budgetary control given on page 3 has therefore to be interpreted in the light of the three essentials of control.

It should be noted at the outset that profitability does not consist of the attainment of certain physical results, but in the relation between the values which are produced by those physical results and the expenses involved in achieving them. These two factors are complementary and, as an objective, the relationship between them is more important than the absolute value of either side. The performance of each quantity must therefore primarily be measured in its own appropriate terms and then brought to a common measure, so that the relationship between them can be gauged. That is to say that the activity of production must first be measured against a production programme in terms of kind, quantity, date, etc., and must be controlled so that the programme shall be achieved as nearly as possible. Similarly, the selling activity must be measured against a programme in terms of kind, quantity, markets, prices, etc. On the other side, expenses must be measured by costs.

But to measure the ultimate results, both kinds of performance—physical and expense—must be brought to the same terms, and this can best be done by expressing them in monetary terms. The physical performance must be brought to terms of "values created" and set down side by side with the expenses involved. This enables progress towards the ultimate objective to be measured by seeing, in one and the same picture, three relationships, viz —

1. The comparison between physical performance and its objective, both expressed in values.
2. The comparison between expenses and their objective.
3. The comparison between the "value-expense" relationship of performance and the "value-expense" relationship of the objective.

Budgetary control is a method of presenting such a picture and proceeds from the recognition of the real nature of the ultimate objectives of the activities of an undertaking. It is not, of course, a substitute for the ordinary means of planning and control of production and selling, but is an addition to these.

It must be further realised that remedial action must be taken by someone duly authorised, or by some section of the organisation. It is therefore highly desirable that progress towards the objectives should be in such a form that the lessons learned are readily convertible into action by someone or some department. It must be remembered that the object of greatest importance is maintenance of the relationship between values

created and expenses involved, or rather the avoidance of this relationship becoming less favourable than budgeted.

This relationship ought to be capable of adjustment by action directed to either side—to raising the level of values created by improved physical performance, or to reducing the expenses. Taken over a long period this is, of course, feasible, but, in considering control of performance, it is often necessary to deal with short-date adjustments and generally the scope for short-date adjustment is by no means equal on the two sides. Generally the achievements of a specified physical production programme present no difficulty where there is an efficient planning department. If the production performance should fall short of programme, departments affected will have been aware of it before it has been converted into accounting values, and will already have taken whatever steps were possible to bring it into line. It is possible, therefore, that the credits for production performance will either be there substantially according to plan, or everything possible to improve them will already have been done by the planning department. Although, therefore, the physical performance is finally measured in terms of "values created" or credits, against a programme, the management is not thereby provided with any new information about it which is not obtainable more easily and at an earlier date from other sources, viz.—records of physical performance. It may therefore be said that all that budgetary control does for the credit side of the picture is to furnish the management with a general overall check on the effectiveness of its planning and physical control method.

It is very different, however, with the expense side. There are no such simple means for controlling expenses as there are for controlling the physical performance. Furthermore there are no simple means for controlling expense in relation to physical performance and this is the purpose which budgetary control sets out to achieve. By showing this relationship, it furnishes the management with information which is not given from other sources but which gives it a new and additional instrument of control. Budgetary control is therefore of particular use in controlling expenses.

While budgetary control of performance begins by measuring the achievement on both sides of the "credit-expense" equation against the respective programme figures, remedial action in connection with it is directed mainly to the expense side. Thus, the objective of budgetary control is the maintenance of the programmed relationship between activity credits and expenses. By the time budgetary control can operate, those executives controlling performance have probably already done

their best to bring such physical performance into line with the programme, and budgetary control cannot add much to the power of management in this respect. What it does do is to give the management a powerful instrument for correcting an unsatisfactory credit-expense ratio by attacking the expense side, and seeing that the physical performance side has not been neglected.

Methods of Measuring Expenses.

If, therefore, managerial action arising from budgetary control is likely to be directed mainly to the expense side, it is worth while considering briefly the various ways which are available for measuring expense with a view to control.

For purposes of measurement, expenses must be classified and grouped, and there are three main bases of primary classification, viz.—

1. Accountancy classification—by class of expense—e.g. raw materials, wages, supplies, etc.
2. Product classification—i.e. grouping and collecting expenses according to the class or item of product in respect of which they are incurred.
3. Organisation classification—i.e. according to the authority in the organisation responsible for incurring them.

The first method is generally used for the accounts. It is useful in ascertaining the profit on the whole undertaking at the end of the year, and is probably the simplest way of ensuring that all items of expense have been taken into account. It is, however, not nearly as valuable as a basis for the current control which management should exercise.

The second method results in costs. It has the advantage that it provides the most direct comparison possible between the expenses and value produced, viz. between costs and prices. But as a basis for managerial control it suffers from the following defects—

1. Whilst many kinds of expense are directly attributable to particular items of product, there are others that are not, and the attempt to allocate them is apt to render cost fluctuations over short periods very unreal guides to action.
2. If the cost is unsatisfactory compared with the price, this information is not in a form that indicates conveniently what action should be taken. A separate investigation is generally needed in order to decide what should be done and who should do it.

3. Costs, from their very nature, are largely historical and lend themselves more readily to control after the event than during it. The force of this objection varies, no doubt, with different businesses, and with different types of costs. Furthermore, it can often be overcome by various devices, but the objection must not be overlooked.

The third method results in control accounts. It has the great advantage that the results provide a direct and definite guide to managerial action. It has the disadvantage, however, that no such simple comparison as that between costs and prices is available as a measure of the expenses, since it is just as difficult to allocate all activity credits to departments of the organisation as it is to allocate all expenses to items of product. In order to judge the expenses, classified by this method, recourse must be had, not to a direct comparison with the credits, but to a statement of what the expenses should have been, corresponding to the credits. Budgets prepared upon this basis are termed "Functional Budgets."

Aids to Control.

In the exercise of control, due recognition should be given to and use made of—

1. *The Value of Statistics.*

These should be presented in as simple, yet as clear and telling a manner as possible. Long columns of figures are hard to assimilate and essentials only should be set forth. Most executives are interested only in departures from the budget, and figures relating to these variations should be shown. Where budget figures are being realised, the executive knows that the business is going according to plan.

2. *Graphs and Charts.*

The use of statistics can often be supported and set forth more strongly by the use of graphs. These can be used to emphasise relationships which the figures do not clearly disclose. Even a casual glance at a chart will often reveal much more than can be learned from a thorough examination of statistics.

3. *Cost and Operating Reports.*

These should be prepared in order to set forth departures from the budget estimates. With a specific purpose in mind and often for a specific executive, they are invaluable. They should be as simple as possible and yet arranged in such a way as to enable essentials to be grasped immediately. Comparisons with similar reports for previous periods should be possible, and

the reports should be promptly prepared. Their value is also greatly added to where they can be used to indicate suggested remedial steps.

Control Over Sales and Marketing Expenses.

In Chapter II consideration was given to the various methods by which sales are estimated and also to the preliminary formulation of standards which would facilitate various methods of control. It is now proposed to investigate more fully the use of such control to ensure that the sales budget figures are approached as nearly as possible, and, furthermore, to make sure that various selling and other marketing expenses are kept under control.

At the outset it is necessary to notice that because marketing expenses are kept in line with the budgeted figures, it is not to be assumed that the position is satisfactory. The reverse may be the case. When the budget was being prepared, the marketing expenses would for the most part be fixed in accordance with a certain selling programme, and if this programme is not achieved, the selling expenses, for example, may represent altogether too large a proportion of the actual sales. Herein lies the limitation of the fixed budget. If the sales actually made were exactly to coincide with the budgeted figures, the comparison of expenses would be simple, but the variations consequent upon differences in price and volume often confuse the issue to such an extent that an unfavourable result may appear to be a favourable one.

It was this weakness of the fixed budgetary system in its dependence upon accurate forecasts of sales which led to the preparation of such other types of budgets as the Multiple, Variable and Flexible. These sought to make provision for differences in turnover, so that control was possible no matter what sales figures were actually achieved. There is no such safeguard with the fixed budget. The procedure is to make an analysis of the turnover and then to judge whether the various expenses are in accordance with what could normally be expected from the actual figures realised. Judgments of this kind may be somewhat haphazard and not always as accurate as desired but at least the analysis of the position would be beneficial and may be the means of adopting plans which will rectify the differences in the sales total. If sales dropped 25 per cent, for example, and selling expenses were in accordance with the budget, this would probably be an unsatisfactory feature, but not necessarily so. Under certain exceptional circumstances a full inquiry into the position may disclose that keeping the sales expenses within the budget may have been quite meritorious.

Similarly when the budgeted sales figures are exceeded, a judgment must be made as to whether the selling expense increases are in line with the sales increase and are what could normally be expected to occur. The differences between this method of treatment and that in the case of the flexible budget are outlined later, and this examination will show the limited opportunities for control which exist where marked fluctuations of turnover are to be found, with consequent differences between budgeted and actual figures. Nevertheless, one factor must be carefully borne in mind. An analysis of the reasons for discrepancies is essential, as once the cause is known an attempt can be made to overcome the difficulties and bring the business closer to the budgetary standards set down.

Analyses of Variations.

Control over sales and selling expenses really resolves itself into analyses of the following—

1. *Variations in the Volume of Sales.*

In the budget the mark at which to aim in respect to sales is set down as a fixed figure. This is the total which the organisation considers desirable, knowing that certain results should follow if this amount can be reached and the various costs kept within the estimates. This total was prepared having due regard to the method and details making it up. Thus the total may have been divided into territories, or products, or in some other way. The comparison between results actually achieved and the budgeted figures can be made at a glance, but analysis is necessary to discover why estimates have not been reached. Even where budgeted figures have been exceeded, analyses must be made, as certain products may have been greatly increased whilst others (and possibly the more profitable) have been reduced. Alternatively, certain territories might have greatly exceeded their quotas, while results in other districts are disappointing. These are simple cases of sales analyses, and in each instance the sales budget is taken as the standard against which the actual is measured. Once the real state of affairs is known, action can be taken to strengthen the weak links and to hold the stronger ones more securely. Investigation of the position may show that the estimates were awry and that there would be little chance of realisation unless some radical course was adopted. Prompt comparisons, however, enable early remedies to be instituted, while an alteration of policy may be necessary to keep the budgetary standards within the realm of practical results, particularly where uncontrollable circumstances have arisen.

Where constant comparison is made between the budget figures and the actual results, it is possible to devote immediate attention to rectifying any detrimental tendencies. Possibly a sales campaign would be inaugurated to increase turnover and bring it back into line with the budget.

2. *Variations in Sales Prices.*

Falls or rises in volume may not be solely due to a falling off of turnover. Actual sales made may perhaps exceed budgeted estimates, but a fall in price may have had a severe effect. Some concerns leave their salesmen a wide margin in the matter of price, and it is possible that the main reason for not reaching budgeted figures lies in the fact that the actual average price realised was, say, £2/2/-, while the budgeted price was £2/4/-. It is also possible that soon after the budgetary estimates were completed (early in the actual year or at the close of the previous year), competition forced a radical reduction in price in one or a number of the larger selling lines. For example, the reduction from £2/4/- to £2/2/- may have been necessitated by such competition. Obviously, a reduction in price will have a totally different result on profits from a reduction of volume, and here is one of the greatest fields for sales analysis. It is quite possible that the reduction of 2/- may make a difference of £2,500 in turnover over a period, but the effect on profit would greatly differ from that which would result from an ordinary fall in turnover of similar amount, providing that the sales prices remained the same. Similarly, a rise in the price of an article is much better from the profit standpoint than an ordinary increase in turnover of a like amount.

Increases in volume or output do not always pay. The vital factor would be the amount of price sacrifice necessary to obtain the increase. Another point which should be borne in mind is that every line of product does not carry its proportionate share of overhead. This is not really a vital matter because the important factor is to obtain enough business of one kind or another to carry the total of all expenses. Products will seldom yield proportionate contributions to overhead but there are, of course, some products which yield so small a sum over production expenses that they may be better dropped.

A fall in general selling prices can at times have disastrous results, and it should be remembered that more sales are necessary in order to keep profits constant. Even where the volume of sales remains the same or approximately the same as was budgeted, the profits will be down. Thus selling prices must be watched even where the actual total sales are in accordance with the budgeted forecasts.

3. *Variations in Varieties of Products Sold.*

When analysed, it will be found that a total sales figure is generally made up of a number of products, each of which differs from the other in the exact amount of profit produced. Various products bring varying rates of profit, and the total sales figure is the result of a budgeted predetermined ratio between them. If the net profit actually to be expected from Product "A" is 11·2 per cent, that from "B" 12·6 per cent, and that from "C" 4·3 per cent, it is obvious that if 5,000 less of products "A" and "B" were sold and 5,000 more of product "C," the actual volume of sales would not fluctuate if the sales prices were the same in each case. Yet it will be seen that such a state of affairs would not only mean a probable serious loss in resultant profit figures, but would also indicate urgent changes being necessary in production and materials control. Here again, total actual sales would approximate total budgetary figures, but actual and budgeted profits would show wide discrepancies.

While the foregoing factors may be evident, a detailed and thorough analysis is often necessary. The first step is to ascertain whether the budget is being achieved. Where there are differences, the next step—that of rectification—is brought into being.

Where sales persistently fall short of the programme the cause of the failure must be found. Rectification may take the form of concentration upon the sale of certain products which have been moving slowly. Departure from the programme is an indication that something is not happening according to expectation and action should be instituted to remedy the situation as far as possible.

Sales Results Analysis.

Figures 41 and 42 show an analysis of salesmen's results in both units and prices. The budgetary figures, representing the expected sales, would have been calculated after a survey of the field to be covered and previous results. For example, assuming that the company markets four products—A @ 10/-, B @ 15/-, C @ 25/-, D @ 30/—the average price of the four sales would be £1. Morrison may be expected to sell 2420 units in all. Actually his budget may be—

605 units of Product "A" @ 10/-
605 " " " "B" @ 15/-
605 " " " "C" @ 25/-
605 " " " "D" @ 30/-

FIGURE No. 41.

COMPARATIVE REPORT OF BUDGET AND ACHIEVEMENTS IN SALES.

Salesman	Budget			Actual			Increase	Decrease
	Units	Price	Amount	Units	Price	Amount		
Morrison	2,420	20/-	£2,420	2,360	20/6	£2419		£1
Burlinson	2,680	20/-	£2,680	2,580	20/-	£2580		£100
Palmer	3,040	20/-	£3,040	3,120	20/3	£3159	£119	
Giles	2,880	20/-	£2,880	3,000	19/6	£2925	£45.	
Holder	2,460	20/-	£2,460	2,520	19/6	£2457		£3
Pike	2,400	20/-	£2,400	2,440	20/3	£2470/10/-	£70/10/-	
	15,880		£15,880	16,020		£16010/10/0	£234/10/-	£104

FIGURE NO. 42.

ANALYSIS OF VARIATIONS—UNITS AND PRICES.

Salesman	Due to Units			Due to Prices			Net Variation
	Units	Price	Amount	Units	Price	Amount	
Morrison	**60**	20/-	**£60**	2360	6d.	£59	**£1**
Burlinson	**100**	20/-	**£100**	2580	..	..	**£100**
Palmer	80	20/-	£80	3120	3d.	£39	£119
Giles	120	20/-	£120	3000	**6d.**	**£75**	£45
Holder	60	20/-	£60	2520	**6d.**	**£63**	**£3**
Pike	40	20/-	£40	2440	3d.	£30/10/-	£70/10/-
	140		£140			**£9/10/-**	£130/10/-

Figures in heavy black type indicate budget greater than actual.

FIGURE NO. 43.

ANALYSIS OF VARIATIONS—PRODUCTS.

Salesman	Product "A"		Product "B"		Product "C"		Product "D"		Total	
	Budget	Actual	Budget	Actual	Budget	Actual	Budget	Actual	Budget	Actual
Morrison	605	560	605	620	605	324	605	856	2,420	2,360
Burlinson	670	700	670	590	670	590	670	700	2,680	2,580
Palmer	760	880	760	660	760	584	760	996	3,040	3,120
Giles	720	840	720	780	720	300	720	980	2,880	2,900
Holder	615	660	615	630	615	792	615	438	2,460	2,520
Pike	600	610	600	600	600	640	600	590	2,400	2,440
	3,970	4,250	3,970	3,880	3,970	3,230	3,970	4,560	15,880	15,920

FIGURE No. 44.

ANALYSIS OF VARIATIONS—PROFITS.

(If profit figures on products were as under—
profit on "A" 2/-
"B" 3/4
"C" 4/-
"D" 5/-)

Salesman	Product "A"		Product "B"		Product "C"		Product "D"		Total	
	Budget	Actual	Budget	Actual	Budget	Actual	Budget	Actual	Budget	Actual
Morrison ..	60 10 0	56 0 0	100 16 8	103 6 8	121 0 0	64 16 0	151 5 0	214 0 0	433 11 8	438 2 8
Burlinson .	67 0 0	70 0 0	111 13 4	98 6 8	134 0 0	118 0 0	167 10 0	175 0 0	480 3 4	461 6 8
Palmer ..	76 0 0	88 0 0	126 13 4	110 0 0	152 0 0	116 16 0	190 0 0	249 0 0	544 13 4	563 16 0
Giles	**72 0 0**	84 0 0	120 0 0	130 0 0	144 0 0	60 0 0	180 0 0	245 0 0	516 0 0	519 0 0
Holder ..	61 10 0	66 0 0	102 10 0	105 0 0	123 0 0	158 8 0	153 15 0	109 10 0	440 15 0	438 18 0
Pike	60 0 0	61 0 0	100 0 0	100 0 0	120 0 0	128 0 0	150 0 0	147 10 0	430 0 0	436 10 0
	£397 0 0	425 0 0	661 13 4	646 13 4	794 0 0	646 0 0	992 10 0	1,140 0 0	2,845 3 4	2,857 13 4

Thus, the total would be 2420 units of all products at an average price of 20/-. Actually he sells 60 units short of his quota, but his average price, through selling more of the higher priced products, is 20/6, and therefore an analysis of his sales shows that he lost £60/-/- in turnover total through selling 60 units less than his quota, but he made up £59/-/- in total by increasing his average price from 20/- to 20/6. The other results should be easily followed from this form.

A similar state of affairs could arise where only one article was being sold, its standard price being 20/-. The salesmen, however, may be allowed to cut this figure slightly if they were able to obtain large orders on that account. Similarly, they would have power to increase their price if they could make sales at a higher figure.

The position disclosed in Figure No. 43 would be that Morrison was 60 units under his budget, but managed to get an extra 6d. on all sold. Burlinson kept to prices but failed by 100 units to reach his budget. A similar analysis could be made in relation to each of the salesmen.

It is also possible to make product surveys in relation to each salesman, though naturally this is difficult where there is a large number of products. In such a case the main products or groups of products would be taken for comparative purposes. An analysis of the various products is shown in connection with Figure No. 43 and it will be seen that each saleman's results can be checked up in relation to the selling results of each product.

There is yet a further analysis to be made—possibly the most important—the profit relationships. These are set forth in detail and results that would require immediate investigation are shown clearly (Figure No. 44).

These statements show what is necessary in order to analyse sales so that any remedial measures necessary can be introduced. Control would take the form of correcting any tendencies towards losing sales, selling too much of some particular product or groups of products, or concentrating upon lines which do not carry a large margin of profit. It may even be necessary to inaugurate a sales "push," and to spend an additional sum in advertising or to adopt other measures of increasing sales.

Marketing Expense.

There is a further instance of profits being affected even though the actual and budgeted sales exactly coincide. This would be in the case of marketing expense, increases here naturally decreasing final profits. There are really three ways in which increased marketing expenses could lessen profits—

1. Where actual and budgeted sales remain even, but marketing expenses increase.
2. Where sales increase, but marketing expenses also increase and at a greater percentage.
3. Where sales fall, but marketing expenses either do not fall or the decreases are at a lesser rate than the drop in sales volume.

Selling Expenses.

Undoubtedly one of the greatest aids in controlling selling expense is the adoption of various units as described previously. The various selling expenses are related to certain units, and by the use of tables an excellent check upon the whole of the activities is possible. Every phase of the work can be covered, including clerical operations associated with sales. Immediate localisation of differences becomes possible, and upon inquiry into the causes, rectifying action can be taken where necessary. The exact method to be adopted depends upon the circumstances causing the variations. The degree of ease or difficulty in ascertaining wherein results are departing from budgeted standards depends not only upon the extent to which unit costs have been adopted, but also upon the amount of detail in the preparation of the budget. Where the budget also forecasted salesmen's results, analyses of these, together with the units, will bring the whole field of selling expenses into review.

The unit system localises the variations, but a survey of salesmen's results will show which members are causing the main trouble. These will not only set forth the amount of sales by each man and whether the actual total achieved is more or less than his budget figure, but will also show the amount of expenses incurred and the ratio which these bear to his sales. In order to make the most effectual analyses product profits should be taken into account, for one salesman may realise his budget figure total, yet his results may be unsatisfactory, whilst another whose sales appear to be lagging, may actually be bringing in more net profit for the business than his budget figure would show. One of the best methods of analysing salesmen's results is shown in Figure No. 44, and it will be seen that this form can also be used for calculating commission based upon payment by results—the results which actually count—net profits on lines sold.

In the past, considerable attention has been paid to the promotion of economies in manufacturing expenses and too little attention has been given to distribution costs. It is obvious that different products made by the factory would cost different amounts to manufacture. Yet it is often assumed,

because of indifference to the subject, that all products cost the same to sell. This is quite wrong, for one article may require very much more selling than another. It is therefore necessary to realise how important it is to analyse the various products and their attendant distribution costs. Only by such analyses can true conclusions be drawn as to the relative profit worth—net profit worth—of different products. Business men everywhere will in the future be giving more and more attention to this important factor. Over the past few years, selling and administration costs have mounted to higher and ever higher proportions and rigid attempts are now being made towards the extension of control methods to include marketing costs, as well as production costs.

In any such analysis, one of the surest ways of arriving at practical results is the adoption of the unit method to individual products. Each product (at least of any importance) is thus analysed as if it were the only product sold by the business. Analysis of manufacturing costs will have already shown the cost of manufacture, the next step being an examination of the necessary selling costs. This completes the costing process instead of leaving it half way. The actual net cost and net profit is thus shown. An operating statement would not be regarded as complete without a profit and loss account to supplement it. Similarly, the net profit for the product is becoming more and more essential and it will be found that increasing avenues of profit will open up through such surveys. An analysis of the actual net profit based on unit costs for selling and distribution costs can generally be prepared, and while the manufacturing costs may show definitely in favour of Product "A," actually, when the selling costs are taken into account, Product "B" may be a better profit-maker. Too much stress cannot be laid upon the possibilities that are now opening up for progressive organisations through comprehensive studies in selling costs. (See Figure No. 45.)

Attention should also be directed towards the question of sales discounts, as excess allowances can have a serious effect upon profits. Where salesmen's results are tabulated, excess allowances made by salesmen should be shown in the final net profit contributed by each salesman, a direct deduction from net profit being made wherever possible.

Stock and Production Relationships.

It was mentioned when dealing with the preparation of the sales budget that the utmost co-operation should exist at all times between the sales and all other departments, but particularly the production department in its relationship to materials and labour. This latter should always be notified of any

FIGURE NO. 45.

COMPARISON OF SELLING EXPENSES.

Expense	Budget Sales £20,000	Actual Sales £19,000	Difference	Budget Unit Cost	Actual Unit Cost	Unit
Salesmen's Salaries ..	453 11 3	481 4 9	27 13 6	2 5 4	2 10 8	per £100 of Sales
Salesmen's Travelling Expenses	329 4 6	342 10 3	13 5 9	1 12 11	1 16 0	
Commissions	127 5 9	97 14 10	**29 10 11**	12 9	10 3	
Telephones and Telegraphs	31 2 1	28 5 9	**2 16 4**	3 2	3 0	
Postages	12 14 6	12 15 11	1 5	1 3	1 5	
Stationery and Printing	13 14 9	15 3 7	1 8 10	1 4	1 7	
	£967 12 10	977 15 1	10 2 3	4 16 9	5 2 11	

Figures in heavy black type indicate budget greater than actual

special selling plans which are likely to affect production. A special campaign for the purpose of increasing sales and if possible bringing them back to budgeted standards may be decided upon, but such a campaign could be spoiled by faulty deliveries. Where sales of a line have slackened off, a campaign may be instituted to attempt to reinstate the product, and even though quite good stocks are held the production department must be alert to the necessity for keeping pace with expected demand.

Up to Date Records.

Up to date records are one of the greatest aids to efficiency. Before adjustments can be made the position must be known. Continuous progressive results are necessary so that corrective action can be taken promptly. Trends are particularly valuable as guides to action and falling turnover demands immediate attention. Too much care cannot be given to these records. It must, however, be recognised that records have no value in themselves except in relation to what they teach and the action that is made possible as a result of what they show.

The whole idea behind the control of sales and selling expense, therefore, is to achieve as close a result as possible to the budgeted figures. Where discrepancies occur they must be analysed, the causes sought, and remedial action taken to restore the balance. Where economic conditions preclude the possibility of actually reaching the budget, sales should be kept as high as possible, and attempts should be made to reduce selling expenses as far as can reasonably be done. Where the budget figures are exceeded action is taken to keep the selling expenses within certain increased limits, so that the whole of the extra profit from increased turnover would not be eaten up by extra selling expense.

Selling Expense Analysis.

When dealing with the preparation of the selling expense budget, attention was drawn to various factors which had to be taken into account and which later could be used in the comparison of actual results with the budgeted standards. These would include—

1. *Selling Costs by Products.*

An example of this analysis is shown in Figure No. 46. Such an examination is necessary because it may be found that where a company manufactures four products, it may derive 75 per cent of its sales from one product and yet the other three may take 75 per cent of the marketing expense.

FIGURE No. 46.

SELLING COSTS BY PRODUCTS.

Product	Sales Volume	Sales Cost	Budget-Ratio Cost to Sales	Actual-Ratio Cost to Sales
	£	£	%	%
1	110,000	2,651	2·35	2·41
2	1,500	130	8·41	8·67
3	15,000	513	3·51	3·42
4	33,000	1,855	5·82	5·62
5	3,400	1,062	30·41	31·24
6	2,800	1,904	61·52	68·00

FIGURE No. 47.

SELLING COSTS BY TERRITORIES.

Districts	% of Total of Gross Sales Yielded	% of Total Direct Sales Expenses	% of Total Customers in Territory	Budget % Ratio of Exp. to Sales Territory	Actual % Ratio of Exp. to Sales Territory
"A"	39·6	24·6	28·6	1·00	·86
"B"	23·8	27·2	31·2	1·00	·87
"C"	17·9	19·8	18·4	1·00	1·08
"D"	12·4	12·9	12·2	1·00	1·06
"E"	3·2	4·1	4·1	1·00	1·00
"F"	3·1	11·4	5·5	2·00	2·07

FIGURE No. 48.

EXPENSES BY TERRITORIES.

Districts	Direct Selling Cost per £ of Sales	Number of Salesmen
"A"	3·134d.	3
"B"	4·216d.	2
"C"	4·384d.	2
"D"	2·814d.	2
"E"	7·163d.	3
"F"	11·465d.	3

2. *Selling Costs by Territories.*

These are shown in Figures 47 and 48. This procedure will often facilitate more economical marketing programmes. For instance, in the example given, an analysis of the expenses in Districts "E" and "F" may be called for. Possibly this would point to the advisability of taking a traveller off "F" territory and trying to develop "D" more strongly.

3. *Costs by Customer Classes.*

One of the most common causes of excessive marketing costs is the soliciting of business from customers whose total value of purchases yields an insufficient margin to cover the costs of contacting with them. (See Figures 49 and 50.)

FIGURE No. 49.

CLASSIFICATION OF CUSTOMER CLASSES.

Size of Group Annual Sales	% of Total Nos. of Accounts	% of Total Volume of Business	% of Total Direct Selling Exps.
Over £5,000	1%	30%	3·4%
£3,500 to £5,000	13%	38%	11·6%
£2,000 to £3,500	19%	18%	18·1%
£1,000 to £2,000	31%	10%	29·6%
0 to £1,000	36%	4%	37·3%

4. *Average Profitableness of Orders Handled.*

This is also a very fruitful field for investigation and often considerable savings can be made by the institution of a campaign to increase the size of orders. (See Figure No. 51.) The high cost of the small order is often overlooked, but it can have a very serious effect upon marketing expenses. This is shown particularly by recent investigations into the relative expenses of two orders—one five times as large as the other. The following results were established—

Office Costs.

The cost of recording the small order was 88% of that of the large order.

The cost of invoicing the small order was 82% of that of the large order.

The cost of granting credit for the small order was 97% of that of the large order.

The cost of collecting the account of the small order was 101% of that of the large order.

Handling Costs.

The cost of packing the small order was 54% of that of the large order.

The cost of trucking the small order was 52% of that of the large order.

The cost of shipping the small order was 56% of that of the large order.

FIGURE No. 50.

CLASSIFICATION BY CUSTOMER CLASSES.

ANALYSIS OF SALESMEN'S EXPENSES.

Salesman	Sal. & Trav. Exs.	Total Sales	Ratio of Exs. to Sales	No. of A/cs	Av. Value per A/c.	Large Accounts			Balance of Accounts		
						Total Sales		Sales per A/c.	Total Sales		Sales per A/c.
	£	£	%	No.	£	No.	£	£	No.	£	£
"A"	1,151	41,704	2·76	167	250	20	20,422	1021	147	21,282	145
"B"	1,485	48,377	3·07	68	711	13	30,265	2328	55	18,112	329
"C"	1,060	27,979	3·79	53	528	15	16,040	1069	38	11,939	314
"D"	1,744	39,116	4·46	52	752	9	23,087	2565	43	16,029	373
"E"	1,039	16,041	6·48	136	117	6	4,761	793	130	11,280	87
"F"	1,118	10,458	10·69	75	139	4	5,231	1308	71	5,227	74
"G"	1,195	10,450	11·44	70	149	6	6,310	1052	64	4,140	65
	£8,792	£194,125	4·53%	621	£313	73	£106,116	£1454	548	£88,009	£161

Assuming that the large order was £20, then the small order would be £4. Supposing that the cost in connection with the large order of each of the items mentioned was 2/6, then the office costs would total 10/- and the handling costs 7/6. From the percentages just given, the costs of the small order would be—

Office Costs.		*Handling Costs.*	
Recording	2/2	Packing	1/4
Invoicing	2/0½	Trucking	1/3½
Credit	2/5	Shipping	1/5
Collection	2/6		
	9/1½		4/0½

Therefore the work on the small order would cost about 75 per cent of the work on the large order. The cost on the £20 order would be 17/6, which would be 4.375 per cent, whilst for five small orders—again totalling £20—the cost would be £3/5/10, which would mean 16.45 per cent.

5. *Analysis of Salesmen's Expenses.*

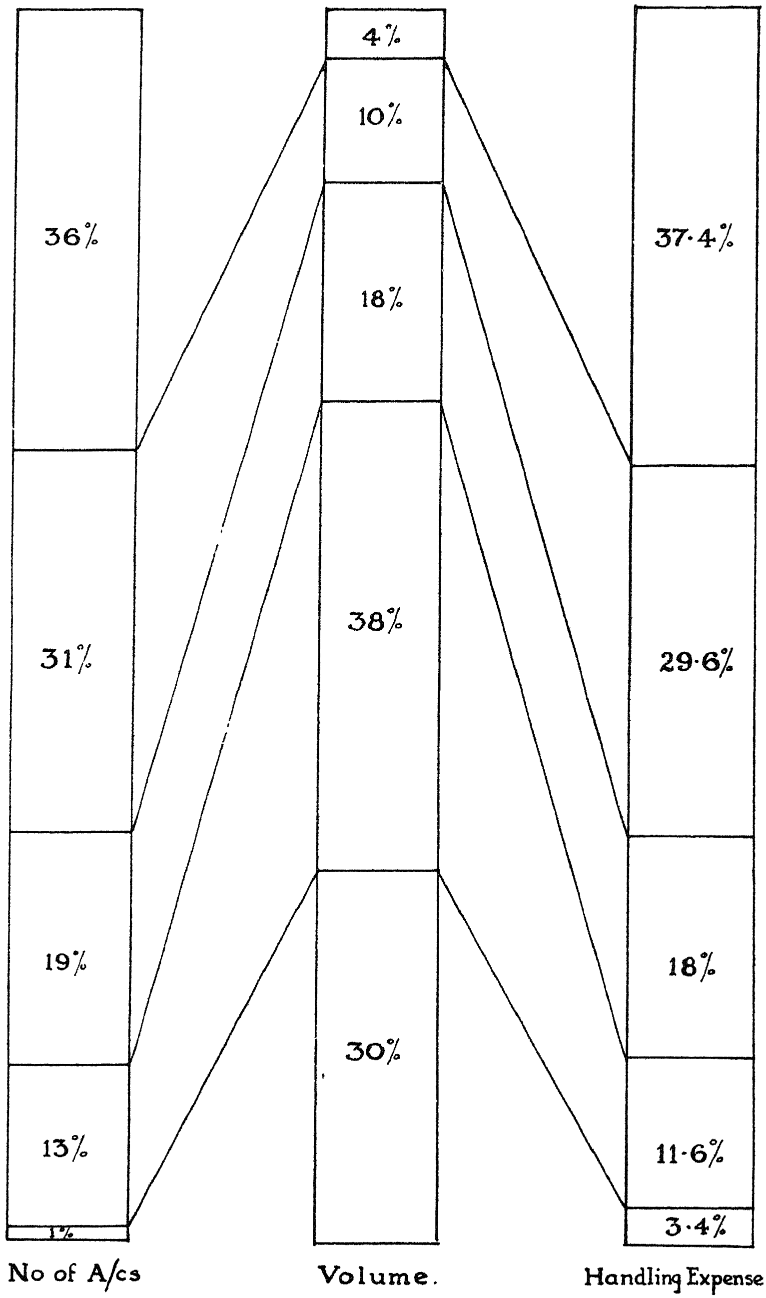
Where there is no direct and constant check upon these expenses, the budget standards laid down are quite likely to be exceeded and results may be quite adversely affected through this cause. Figure No. 50 shows the type of form that can be used. In addition comparison of unit costs can be made, e.g. unit cost of sales made (compare budget and actual) and unit cost of selling expenses per £100 of sales.

Advertising Expense.

When dealing with the advertising budget (see Chapter III), a method was outlined whereby expenditures in relation to the various schemes of advertising activity could be pre-arranged, and it was pointed out that these tables would then operate as the basis for the period. The details set forth would govern all the advertising work. Frequent consultation of the plan is essential to keep to the necessary procedure. It is useless to prepare plans to forget all about them as soon as they are made. The various allocations of actual expense incurred can be traced and a check kept on any tendency to over-spend. The advertising budget shows the usual manner in which progressive details can be charted so that the unexpended portion of any particular appropriation is at once evident. (See Figure No. 52.) Arrangements can be made to vary the programme where the figures demand it. For example, it may be found that by the end of November radio has only £200 of its appropriation left. Therefore this amount represents the total which should not be exceeded, unless special circumstances demand it. This pro-

FIGURE No. 51.

AVERAGE PROFITABLENESS OF ORDERS HANDLED.



cedure can be adopted in relation to monthly figures so as to keep the monthly expenditures in line with monthly appropriations. In dealing with the advertising budget the total annual appropriation was divided into monthly amounts, and it was pointed out that these would take into account any seasonal or special considerations, and therefore probably would not represent one-twelfth of the total. For example, in the case of toys additional advertising would be demanded prior to the Christmas season, while in the month of February it may be possible to dispense with advertising altogether. Summer and winter sports goods, clothes and fashion displays all illustrate this factor.

It was also pointed out, however, that where thought advisable (and previous remarks made in relation to the increased research possibilities opening up in relation to economies to be derived from examinations of selling expenses give additional emphasis to this factor), advertising appropriations can be divided to show amounts applicable to individual products or lines of products. Figure No. 52 shows how control can be established in relation to such. Any over-expenditures become immediately noticeable, whilst the amount still available for advertising particular lines is progressively shown.

FIGURE NO. 52.

ADVERTISING BUDGET.

	Total Budget	Total Actual	July Budget	July Actual	August Budget
Newspaper Space	538 0 0		86 0 0	92 10 0	86 0 0
Plus Under or Less over Spent ..					**6 10 0**
Revised Budget					79 10 0
Cumulative			452 0 0	445 10 0	366 0 0
Radio	336 0 0		48 0 0	48 0 0	48 0 0
Plus Under or Less over Spent ..					
Revised Budget					48 0 0
Cumulative			288 0 0	288 0 0	240 0 0
Neon Signs	135 0 0		22 10 0	22 10 0	22 10 0
Plus Under or Less over Spent ..					
Revised Budget					
Cumulative			112 10 0	112 10 0	90 0 0

FIGURE No. 52—Continued.

	Total Budget	Total Actual	July Budget	July Actual	August Budget
Samples	136 10 0		8 0 0	37 15 0	28 10 0
Plus Under or Less over Spent ..					**29 15 0**
Revised Budget					Nil
Cumulative			128 10 0	98 15 0	98 15 0
Catalogues	38 0 0		38 0 0	39 15 0	Nil
Plus Under or Less over Spent ..					**1 15 0**
Revised Budget					
Cumulative			Nil	**1 15 0**	
Novelties	116 10 0		Nil	Nil	Nil
Plus Under or Less over Spent ..					
Revised Budget					
Cumulative			116 10 0	116 10 0	116 10 0
Picture Slides	135 0 0		35 0 0	43 10 0	15 0 0
Plus Under or Less over Spent ..					**8 10 0**
Revised Budget					6 10 0
Cumulative			100 0 0	91 10 0	85 0 0
Posters	51 10 0			Nil	51 10 0
Plus Under or Less over Spent ..					
Revised Budget					
Cumulative			51 10 0	51 10 0	Nil
Trade Papers	40 3 0		6 5 0	11 11 0	5 5 0
Plus Under or Less over Spent					**5 6 0**
Revised Budget					Nil
Cumulative			33 18 0	28 12 0	28 12 0
Sundries	10 10 0		Nil	Nil	Nil
Plus Under or Less over Spent ..					
Revised Budget					
Cumulative			10 10 0	10 10 0	10 10 0
Total .. .	£1,537 3 0		£243 15 0	£295 11 0	£256 15 0

Amount Over or Under Spent (Over) £51 16 0

Cumulative £1,293 8 0 £1,241 12 0 £1,033 12 0

Figures in heavy black type indicate budget greater than actual.

In few places more than in the case of the advertising appropriations does the budget give such a clear exposition of the aims and accomplishments desired. With care and attention given to its preparation it presents a chart which, except where extraordinary circumstances later come into operation, can act as a step by step approach to the desired end. It should give a carefully conceived plan of action to the advertising manager, enabling him to concentrate the whole of his attention and energies upon the best means of getting results from those spheres of advertising which are before him. He knows at a glance what advertising is left to him in relation to various advertising media and various products or groups of products, and he has always in his hands an element of valuable control.

At times the budget will have to be altered, but this is not a difficult job, and new appropriations are inserted in place of the old. Various factors may contribute to such a necessity and this is a further proof of the need for co-ordination between the sales and advertising departments (e.g. where extra publicity on the part of competitors calls for an increased advertising appropriation). Wherever possible, alterations to the budget should be necessitated only by uncontrollable factors.

Altogether the advertising budget, and the control of advertising expenditure through such, is one of the easiest of controls, and yet one of the most effective. It ensures that care and attention given to the preparation of the budget in the first instance and having as its aim the obtaining of maximum value and worth from each £ spent in advertising, is carried to its logical conclusion and is translated into practical action.

Shipping and Transportation Expenses.

In the consideration of this expense, a unit system of control was again advocated, because by such method it is possible to relate actual results to units which in themselves are the most efficient form of check. It should be noted that a rise or fall in turnover does not necessarily tell the whole story in relation to a rise or fall in these expenses. Indeed a general rise or fall in turnover may be misleading when expenses of this type are compared on this basis. For example, it is quite possible for a rise in packing expense to be warranted even in the case of a fall in actual turnover. These expenses do not always bear a fixed relationship to actual sales, but when branched together into groups of products more stable conditions may be obtained.

Variations in these expenses and departures from budgetary estimates can quite easily be localised, firstly to an account—e.g. shipping expense, then to the causes of the variation. It is sometimes found that whereas one expense increases, another

shows a decrease. For example, freights may be increased whilst cartage, an account of similar type and closely related, has decreased. The reason for these differences may be that extra goods have been sent by boat or train instead of being carted by road. It may therefore be assumed that items which were shown as cartage in the budget are now really included in freights. Another explanation may be that, whereas provision was made when the budget was prepared for a certain amount of cartage to convey goods to a wharf, an arrangement with the shipping company may mean that the steamer picks the goods up at a nearer point, saving quite a lot of cartage, though this is somewhat offset by an extra freight charge. Again the increase in cartage may be a commendable case of economies made, whilst the increase in freights may have been due to a general rise. All sorts of explanations may be possible, and it is necessary to sift each one to discover the true cause. Then, having found the trouble, attention can be directed to its rectification.

Production Control.

The production policy of an enterprise must be based upon sales results. In the preparation of the production budget an attempt was made to show that any production policy must be made to harmonise with sales, and be based upon the requirements in goods or services necessary to carry out the formulated sales programme. When actual conditions force some changes in the sales budget, these will naturally be reflected in the production policy. Every business manager knows the fundamental necessity of avoiding dislocation by fostering the closest co-ordination between these two portions of the business.

Just as it is necessary, therefore, to check sales results and stocks continually so as to be able to ascertain just how far from the budget these have departed and so that remedial measures may be adopted without delay, so it is necessary to see that changes are portrayed in a changed production policy. At the same time, examination should be made to see that the results of the productive policy have, until changes became necessary, been in accordance with the budgeted standards. There should always be such standards, even if from time to time one set is superseded by others.

Up to date records, pointed out as being invaluable in sales control, are equally important in the productive field and they should be available with a minimum of delay. The efficiency of the enterprise may well depend upon the manner in which examination of results can be facilitated. Once the effect upon production is known, the results upon other budgets such as Purchases and Materials Budgets, as well as the Labour Budget,

FIGURE No. 53.

PRODUCTION BUDGET.

Cost per lb. of Production and Sales.

Particulars	July Budget	July Actual	July Difference	August Budget
"GUINEA"				
Stock on hand at 1st month	6/-·00000	6/-·00000		5/11·35992
Production	5/10·56000	5/10·728	·168	5/11·02901
Total	5/11·35992	5/11·448	·08808	5/11·21976
Less Sales	5/11·35992	5/11·448		5/11·21976
Stock on hand at end month	5/11·35992	5/11·448		5/11·21976
"LOYALTY"				
Stock on hand at 1st month	5/8·00000	5/8·00000		5/7·66500
Production	5/7·20000	5/6·936	**·264**	5/7·70352
Total	5/7·66500	5/7·548	**·117**	5/7·68000
Less Sales	5/7·66500	5/7·548		5/7·68000
Stock on hand at end month	5/7·66500	5/7·548		5/7·68000
"CROWN"				
Stock on hand at 1st month	6/9·00000	6/9·00000		6/7·72639
Production	6/5·784	6/6·456	·672	6/6·15187
Total	6/7·72639	6/8·016	·28961	6/7·08081
Less Sales	6/7·72639	6/8·016		6/7·08081
Stock on hand at end month	6/7·72639	6/8·016		6/7·08081
"NATIONAL"				
Stock on hand at 1st month	7/2·00000	7/2·00000		7/1·05811
Production	7/-·00000	7/-·432	·432	7/-·49857
Total	7/1·05811	7/1·32	·26189	7/-·79307
Less Sales	7/1·05811	7/1·32		7/-·79307
Stock on hand at end month	7/1·05811	7/1·32		7/-·79307

Figures in heavy black type indicate budget greater than actual.

can be gauged quite accurately. The effects on these various budgets may vary quite considerably. For example, in the case of the materials budget the differences may resolve themselves into a rearrangement of stock quantities. The first thing to be done would be to ascertain the effect of the new production programme upon stocks on hand and stocks likely to be required. This may mean considerable work and may at times involve almost a complete recast of the budget where departures from budgetary estimates have been considerable. It would be necessary to see that the quantities of materials required are changed to meet the new conditions. It should be remembered that a change in policy, especially where dictated by more or less emergency conditions, may mean—

1. That the concern may be caught short of materials.
2. That it may go on accumulating certain materials which may later on be difficult to use.
3. It may pile up capital in the form of surplus stocks, or it may have insufficient manufactured stocks to take care of sales orders received.

An examination of the materials budget is a necessary preliminary to a survey of the purchase budget and the changes entailed there. (See Figure No. 53.)

The productive programme must therefore be constantly checked to see—

1. That it is kept in line with the sales programme, in the same proportions and categories as existed in the budget relationships.
2. That the co-ordination in routine and between departments and processes set forth in the budget procedure is adhered to.
3. That efficiency standards are being maintained.
4. That the budgetary programme in relation to analysis, scheduling, despatching and inspection is being adhered to.
5. That the amount of products turned out is in accordance with the budget estimates.
6. That such items as idle time are investigated.

Materials Control.

In the preparation of the materials budget (see Chapter IV) it will be remembered that quantities of materials to be purchased and to remain on hand at the end of each month were calculated in order to arrive at the most efficient and economical procedure. The actual stocks on hand at the end of each month, the actual receivals, and the amount of each class of material

used would be examined and compared with the budget standards. Where sales of one line are dragging, the stocks of finished goods would commence to accumulate and it would sometimes become necessary to draw the attention of the sales department to this factor. The following matters must be checked in seeking for adequate materials control—

1. The stock position must be compared periodically with budget figures.
2. The maximum and minimum limits must be examined to note actual adherence to those limits.
3. The actual periodical material requirements should be compared with the budget.
4. The question of whether orders have been exactly complied with in relation to quality and quantity should be examined.
5. The receipt and issuing of all materials should be checked where large discrepancies between the actual and the budget are evident.
6. Delays in delivery and stoppages of work through materials shortages should be analysed.

The following main causes of materials cost variations should be inquired into—

1. Any changes in purchasing policies or practices.
2. Changes in market prices of raw materials, where considerable.
3. Changes in the design of product, machinery or tools.
4. Changes in the methods of processing or fabricating.
5. Changes in quality or kind of materials used.
6. Excess spoilage of materials during production.
7. Shrinkage of inventories in raw materials, processed or finished parts.
8. Damage during handling.
9. Too rigid inspection.
10. Errors.

Some of these factors are considered in relation to purchasing.

With careful attention the control of materials should not be difficult, providing that the budget was carefully worked out in the first place.

Figures 54 and 55 show forms for materials control.

Purchases Control.

Alterations in the materials budget will cause changes in the purchase budget. Either increased or decreased purchases may be necessary and these must be controlled having due regard

FIGURE No. 54.

MATERIALS BUDGET.

Stocks of Manufactured Tobacco in Quantities.

Particulars	July Budget	July Actual	July Difference	August Budget
"GUINEA"				
Stock on hand at 1st month	10,350	10,350		11,550
Plus Production	8,100	8,460	360	8,900
Total	18,450	18,810	360	20,450
Less Sales	6,900	7,269	369	7,700
Stock on hand at end month	11,550 lbs	11,541 lbs	**9 lbs.**	12,750 lbs
"LOYALTY"				
Stock on hand at 1st month	7,600	7,600		7,900
Plus Production	5,400	5,700	300	5,400
Total	13,000	13,300	300	13,300
Less Sales	5,100	5,168	68	5,300
Stock on hand at end month	7,900 lbs	8,132 lbs	232 lbs	8,000 lbs
"CROWN"				
Stock on hand at 1st month	15,000	15,000		15,300
Plus Production	10,300	10,505	205	10,650
Total	25,300	25,505	205	25,950
Less Sales	10,000	10,905	905	10,200
Stock on hand at end month	15,300 lbs	14,600 lbs	**700 lbs**	15,750 lbs
"NATIONAL"				
Stock on hand at 1st month	60,000	60,000		64,500
Plus Production	52,500	50,612	**1,888**	51,850
Total	112,500	110,612	**1,888**	116,350
Less Sales	48,000	45,092	**2,908**	51,600
Stock on hand at end month	64,500 lbs	65,520 lbs	1,020 lbs	64,750 lbs
TOTAL STOCKS				
Stock on hand at 1st month	92,950	92,950		99,250
Plus Production	76,300	75,277	**1,023**	76,800
Total	169,250	168,227	**1,023**	176,050
Less Sales	70,000	68,434	**1,566**	74,800
Stock on hand at end month	99,250 lbs	99,793 lbs	543 lbs	101,250 lbs

Figures in heavy black type indicate budget greater than actual.

FIGURE No. 55.

MATERIALS BUDGET.

Stocks of Manufactured Tobacco in Amounts.

Particulars	July Budget	July Actual	July Difference	August Budget
"GUINEA"				
Stock on hand at 1st mth.	3,105 0 0	3,105 0 0		3,434 10 6
Plus Production	2,381 2 5	2,493 17 4	112 14 11	2,633 19 10
Total	5,486 2 5	5,598 17 4	112 14 11	6,068 10 4
Less Sales	2,051 11 11	2,163 12 0	112 0 1	2,284 19 4
Stock on hand at end of month.	£3,434 10 6	£3,435 5 4	14 10	£3,783 11 0
"LOYALTY"				
Stock on hand at 1st mth.	2,153 6 8	2,153 6 8		2,227 6 1
Plus Production	1,511 17 1	1,589 6 8	77 9 7	1,523 6 7
Total	3,665 3 9	3,742 13 4	77 9 7	3,750 12 8
Less Sales	1,437 17 8	1,454 6 0	16 8 4	1,494 12 0
Stock on hand at end of month.	£2,227 6 1	£2,288 7 4	£61 1 3	£2,256 0 8
"CROWN"				
Stock on hand at 1st mth.	5,067 10 0	5,067 10 0		5,083 11 3
Plus Production	3,337 19 11	3,434 4 6	96 4 7	3,468 1 0
Total	8,405 9 11	8,501 14 6	96 4 7	8,551 12 3
Less Sales	3,321 18 8	3,635 4 0	313 5 4	3,361 18 8
Stock on hand at end of month.	£5,083 11 3	£4,866 10 6	**£217 0 9**	£5,189 13 7
"NATIONAL"				
Stock on hand at 1st mth.	21,500 0 0	21,500 0 0		22,861 9 6
Plus Production	18.374 12 9	17,811 8 3	**563 4 6**	18,255 4 3
Total	39,874 12 9	39,311 8 3	**563 4 6**	41,116 13 9
Less Sales	17,013 3 3	16,028 18 0	**984 5 3**	18,234 16 2
Stock on hand at end of month.	22,861 9 6	23,282 10 3	421 0 9	£22,881 17 7
TOTAL STOCKS				
Stock on hand at 1st mth.	31,825 16 8	31,825 16 8		33,606 17 4
Plus Production	25,605 12 2	25,328 16 9	**276 15 5**	25,880 11 8
Total	57,431 8 10	57,154 13 5	**276 15 5**	59,487 9 0
Less Sales	23,824 11 6	23,282 0 0	**542 11 6**	25,376 6 2
Stock on hand at end of month.	33,606 17 4	33,872 13 5	£265 16 1	£34,111 2 10

Figures in heavy black type indicate budget greater than actual.

to the position of existing contracts. In the ordinary control of operations, standards of efficiency for purchasing can be arrived at by comparing current purchasing cost of materials with standard material purchase costs. This generally implies a system of standard costs, and the checks would be carried out automatically. Where any efficiency bases can be adopted these can be used to keep a check on the purchasing department and the results shown, and this check can be used both by the management and by the purchasing agent. Where it is possible to prepare a Proved Savings Account or a Loss and Error Account, the results of the department can be put into a concrete form. Generally, however, a statement in a form similar to that shown in Figure No. 56 would be sufficient. Changes in prices of materials sufficiently serious to cause important cost alterations should be investigated. Analysis of the materials budget may show that the purchasing department is primarily responsible for departures from the budget. Sometimes it is necessary to include quality in inquiries as faults in quality may have an effect upon quantities of materials being used. Similarly, the purchase department, by their policy, may alter the financial budget. Instead of obtaining and working on 30 days' terms, they may be paying spot cash. Quantities of materials purchased would, of course, need constant attention. (See Figure No. 56.)

Before leaving this matter of materials and purchase control, it will be well to examine an illustration showing the effect on surplus funds which could well come about through a disregard of the factors outlined. An organisation making £25,000 per year may have a normal stock of £100,000. An increase in stocks of 25 per cent would mean that no cash benefit would be felt from the profit during the year, and though this example may be a little exaggerated, it can be seen that even proportionate increases could have a serious effect on actual cash resources, particularly where capital expenditure is being incurred. In addition to this, inventory turnover, the possibilities of obsolescence, and the fact that carrying stocks costs money, must be considered. It is significant that the most successful business concerns have been devoting increased attention to keeping minimum safe stocks and results have shown that action has been more than justified

Labour Budget.

The various methods by which this is prepared were outlined in Chapter IV. It was pointed out that frequently the labour budget is confined to the various labour hours and the payroll budget deals with the question of wages payable. It is this latter figure which finds its way into the financial budget. Furthermore, repairs and maintenance are frequently treated

FIGURE No. 56.

PURCHASE BUDGET.

July Budget Volume	July Budget Amount	July Actual Volume	July Actual Amount	August Budget
Tobacco Leaf—				
22,500 lbs @				
22,500 lbs @				
22,500 lbs @				
11,250 lbs @				
11,250 lbs @				
90,000 lbs @	£7,911 0 0	87,596 lbs.	£7,793 10 0	£2,990 0 0
Proportion Salaries, etc.	65 10 0		65 10 0	10 0 0
	7,976 10 0		7,859 0 0	3,000 0 0
Tins, Labels, etc. (as per partics.) ..	1,180 0 0		1,180 0 0	1,180 0 0
Proportion Salaries, etc.	10 0 0		10 0 0	10 0 0
	£1,190 0 0		1,190 0 0	1,190 0 0
Packages, Containers, etc. (as per partics.)	238 0 0		207 4 7	238 0 0
Proportion Salaries, etc.	2 0 0		2 0 0	2 0 0
	£240 0 0		209 4 7	240 0 0
Ingredients (as per partics.)	950 18 0		676 14 8	1041 2 9
Proportion Salaries, etc.	5 16 8		5 16 8	5 15 6
	£956 14 8		682 11 4	1,046 18 3
Summary—				
Purchases	10,279 18 0		9,857 9 3	5,449 2 9
Salaries	83 6 8		83 6 8	27 15 6
Total	£10,363 4 8		£9,940 15 11	£5,476 18 3

separately, and in such cases the personnel of this department do not appear in the labour budget and their wages are not shown in the payroll budget. Whether these segregations take place or whether everything is included in the labour budget, the purpose is the same—to see that the figures estimated have been realised, or, where the production budget has been changed, that the conditions operating under the new schedule have been maintained. Sometimes, of course, the actual productive labour and expense are calculated on a basis of a machine rate or labour hour rate or some other such method. An examination of actual results will show whether these estimates have been realised.

In the first place the number of men actually employed can be checked with the number shown in the budget, week by week, or month by month, as the case may be. When extra men are employed, it is necessary, firstly, to inquire into the reason and, secondly, to see that the extra wages paid are compensated by increased results. Thus, extra men employed in the production department should normally result in extra production. More men in such departments as transportation and despatch should only have been warranted by extra work going through these channels. Where repairs and renewals are covered in the labour budget and more men are employed than was estimated in the budget, the amount of work put through by this department should show an increase over that originally arranged. Whether the labour budget deals with the actual wages payable or whether this is the province of the payroll budget, attention should also be directed towards checking the total wages paid with the amount budgeted. Where discrepancies are in evidence, these should be localised and traced to a particular department, and then an examination should be made to ascertain the reason for the increase. Often such increases will be perfectly legitimate and warranted by the additional work going through. At other times, increases may be unavoidable for other reasons. As an example the department controlling repairs may be again cited. Some very heavy repair work may have become urgently necessary and to minimise dislocation in the factory it may be necessary to work extra shifts or to carry on with night work overtime with the regular employees. Such a policy is expensive, but very often infinitely preferable to allowing portion of the factory to remain idle.

When variations occur, the reason can often be looked for amongst the following causes—

1. Changes in design of product.
2. Changes in machinery, tools, equipment or methods, or in specifications.

3. Unsatisfactory working conditions.
4. Increased wages or working hours.
5. Overtime.
6. Idle time.
7. Slackness in routing or despatching.
8. Inefficiency.
9. Holidays.
10. Repairs.

Each of these matters should be examined and, wherever possible, the adjustments made. (See Figure No. 57.)

In order that the labour budget be realised, staff controllers should be impressed with the necessity for keeping within the standards which have been set down by the budget. Unless care is taken it will often be found that in some departments at least the predetermined number of men to be employed and wages payable are forgotten, and extra men may be employed with no thought of the budget, even though the amount of work going through the particular department does not warrant any increase. Sometimes the best results can be obtained by allowing the staff superintendent an over-riding voice in staff employment and he then automatically refers to the budgetary programme before carrying out the wishes of departmental managers in the employment of extra staff.

Up to date statistics will be found of great benefit in the exercise of control over labour and wages. It is most helpful to be able to inquire immediately into any departure from the recognised programme. This not only means that where increases were not warranted they can be immediately stopped but also that changes which may warrant some alteration are treated on their merits and only those differences are allowed which are essential under the new arrangements.

Plant and Equipment Control.

1. *Repairs and Renewals.*

Some mention was made in Chapter IV of the control to be exercised in the case of repairs and renewals where these appear as part of the labour and payroll budgets. If a separate budget has been prepared the procedure is similar. Where there has been no call for any serious alteration in the budgetary plans, the actual results can be compared with the estimates, both in total and (where they were thus prepared) in departments. Checking can be exercised both in relation to the number of men employed in the repairs and renewals department and the amount of wages spent. Sometimes a bad break may necessitate extra work, and of course this contingency may not have been foreseen when the budget was prepared. Where there are no

FIGURE NO. 57.

LABOUR BUDGET.

Particulars	July Budget	July Actual	July Difference	August Budget
Manufacturing Wages				
Stripping ..	127 14 6	128 9 3	14 9	136 19 7
Liquoring ..	86 13 10	90 4 7	3 10 9	94 18 11
Mixing	124 5 9	126 4 10	1 19 1	130 4 2
Steaming .	102 10 6	99 3 9	**3 6 9**	112 4 10
Toasting ..	87 10 6	92 1 6	4 11 0	91 13 10
Pressing	127 4 5	128 4 10	1 0 5	133 5 7
Drying	95 14 7	94 2 6	**1 12 1**	104 16 11
Cutting	104 14 4	110 15 5	6 1 1	112 18 2
Packing	295 6 7	314 15 3	19 8 8	303 10 2
Boxing	186 19 3	184 1 6	**2 17 9**	188 15 7
Supervision ..	260 2 10	260 2 10		270 2 11
Cleaning and Sundries ..	48 11 6	47 15 9	**15 9**	54 4 0
Total ..	£1,647 8 7	£1,676 2 0	£28 13 5	£1,733 14 8
Service Dept. Wages				
Repairs and Maintenance	52 7 1	58 16 4	6 9 3	56 15 2
Despatch	104 14 6	103 19 10	**14 8**	115 6 2
Purchasing ..	83 6 8	83 6 8		27 15 6
Total ..	£240 8 3	246 2 10	£5 14 7	£199 16 10
Salaries				
Selling				
Salesmen ..	509 3 4	509 3 4		541 13 4
Advertising ..	62 10 0	62 10 0		62 10 0
Collections ..	17 0 9	17 0 9		18 2 6
Total ..	£588 14 1	£588 14 1		£622 5 10
Administration				
Office	392 9 0	403 11 5	11 2 5	417 10 0
Managerial .	150 0 0	150 0 0		150 0 0
Total ..	542 9 0	£553 11 5	£11 2 5	£567 10 0
TOTAL WAGES	£3,018 19 11	£3,064 10 4	£45 10 5	£3,123 7 4

Figures in heavy black type indicate budget greater than actual.

special conditions to alter the procedure, the plans laid down in the budget can be followed out almost in entirety. Figure No. 58 shows the type of Control Report often used to keep check on this expense.

2. *Plant and Equipment.*

The plant and equipment budget was designed to show the extra plant that would be necessary to carry out the desired prearranged production programme. In all probability this budget would require no alteration unless the budgetary figures were not being realised because of more or less production. If production estimates were being exceeded, it is possible that extra plant may be necessary. On the other hand, plant which was to be installed may be dispensed with if sales are not maintained, and the production policy is consequently short of the planned programme. Where there are departures—serious departures—from the budget, care must be taken to see that the fullest consideration is given to this question of plant. A marked increase in sales may warrant the installation of a machine at a much earlier date than was anticipated, and the problem may be complicated because of delay in delivery following the actual placing of an order. Similarly, whilst it was intended to place an order for a new machine, it may be advisable to hold over the authority where it is found that there is a slackening off in orders with a prospect of this being both serious and permanent. These factors can only be dealt with as and when they arise.

Where the original programme can be adhered to, however, the measure of control resolves itself into seeing that the expenditure allowed for complete installations is not exceeded. Where a contract to install a machine completely is accepted, the problem largely solves itself; but where the installation work is carried out by the firm's own engineers it is necessary to see that the original estimates, not only the cost of the machine landed in the shop, but also the wages paid and expenses incurred in connection with its installation, and any and all work necessary until the machine is ready for use, are adhered to. Furthermore, the question of the time taken for the installation will enter into the matter and this must also be controlled. Generally this can best be done by means of a Gantt Chart. If the production department is counting upon using a certain machine as from 1st October, for example, the whole of the factory may be seriously upset if an extra three or four weeks are taken in the installation. As a rule these matters are not difficult to control as long as the budgeted estimates have been carefully worked out and are used to guide the actual installatory process.

FIGURE No. 58.

REPAIRS AND RENEWALS CONTROL.

For Month Ending........................

Machine	Department	Date Authorised	Time Spent		Value of Work Performed		Over	Under	REMARKS Reasons for Discrepancies
			Budget	Actual	Budget	Actual			

FIGURE No. 59.

PLANT AND EQUIPMENT BUDGET.

MONTHLY REPORT ON APPROPRIATION.

Name of Appropriation	No.	Period	% of Completion	Original Amount	Additions	Deductions	Final Amount	Cash Disbursement to date	Unallotted Balance	Contract for Labour and Supplies	Balance Available for future Contracts

Monthly Authorisation of Expenditures.

When dealing with the preparation of the plant and equipment budget, it was pointed out that a check on these expenditures can very often be obtained by having all such authorised by the chief executive. This means that at the beginning of each month, for example, the amount which it is proposed to spend during that particular month would be placed before this official and he would give approval for the expenditure. Where there is any departure from the budget full explanation should be given concerning the reasons for the payments, and this should be accompanied by a request for approval of the project. Even where close supervision of expenditures of this kind is not undertaken by a chief executive, it is often found that instructions are given that all extra expenditures must be authorised. The executive then knows that he can direct his attention solely to those requests for authorisation which come before him, and he is able to keep a check on all extra amounts being incurred.

Essential Projects not included in Budget.

While every effort should be directed towards keeping within the limits of the budget, it must be remembered that conditions may arise which make a departure from the original programme essential. At times a new machine will become imperative, the alternative being a stoppage of portion of the factory or at least a dislocation of the various activities. This also applies to special repairs, which may become necessary almost overnight, and which may not have been included in the budget. Under such circumstances authorisation of the changes necessary should be made immediately, as the fact of whether or not they were included in the budget is of secondary importance compared with keeping production going.

It will generally be found that with reasonable care and attention the plant and equipment budget can be carried out very closely. A form for the control of additional equipment and expense is shown in Figure No. 59.

Manufacturing Expense Control.

Allocation of expenses is generally made on the basis of direct labour hours, direct labour cost, or a machine hour rate. Alternatively, accounts may be kept for various expenses and no attempt may be made at allocation. In any case, the method of control is similar. Differences in the rates would be caused either by increases or decreases in the total expenses, or, in the first case, the total operating hours, secondly the total

labour cost, or thirdly the number of machine hours. These differences can be checked back to the account or various accounts responsible. It may be found that certain accounts show increases whilst others show a decrease. The reason for the difference in each case should be analysed, and any avoidable factors should be remedied. The following items would probably require special attention—

Power, Heat and Light.

Any material increase or decrease in this account should be reflected in the production programme. If the factory was working overtime, for example, it could be assumed that any reasonable increase in the amount of this account would be legitimate. On the other hand, an increase in these charges when production is less than budgeted would warrant prompt inquiry. No difficulty should be experienced in ascertaining the trouble.

Telephone.

Probably little control would be necessary here, and the amount allowed in the budget would have been based on previous accounts. The reason for any material increase should either be apparent or become so upon analysis.

Fire Insurance.

It is unlikely that this account would alter except where increases in rates have been made by the insurance companies or it has been thought advisable to increase or decrease amounts insured.

Depreciation.

This amount really requires little in the way of actual control. It is possible that there may be a difference from the budgeted allowance where new unbudgeted machinery has been purchased and a proportion of depreciation on the new equipment has to be taken into account, where extra amounts are allowed in consequence of the rapid deterioration of a machine, or where a new invention has made a machine obsolete.

Handling, Trucking, Testing and Inspection.

Where these items are treated as manufacturing expenses, the monthly totals will be compared with budgeted allowances and differences should be easily traceable. Some of the discrepancies will be legitimate, having been caused by increased or decreased work. Others may require some remedial action.

Welfare Expense.

Except under special circumstances, this amount should not vary. It is similar in nature to an advertising appropriation and any alteration should first of all have been sanctioned by a responsible executive.

Laboratory Expense and Research Work.

Expenses of this kind will generally be found to be of a steady nature, except where special problems, unforeseen at the time of the preparation of the budget, are encountered. In such cases it is not infrequently found that a special allowance is authorised for additional work to be done. Apart from these factors, inquiry can be made into any excessive expenditure, and where necessary provision can be made to decrease payments in subsequent months to bring the level down to the total periodical amount originally provided.

Inventory Expenses.

These budgeted amounts would have been prepared in the budget according to the inventories that it was proposed to cover. Where there is no decisive difference in actual stocks and budgeted estimates, there would probably be no reason for the budgetary figures being exceeded. Where there is an unexplained increase, it would be necessary to examine the items making up the total to ascertain the reason. Steps can then be taken to prevent the continuance of the factors causing the increase. This expense is very often treated separately in the materials expense budget, and consideration of this was given when dealing with that subject.

As in the case of other budgets, the degree of success achieved in controlling manufacturing expense will largely depend upon the constant checking of actual expenditures with budgeted estimates. From the accounts department, monthly summaries of actual expenses incurred should be obtained. Note must be taken of production volume, as an increase of this would be almost certainly accompanied by heavier expenses. Control would be directed towards seeing that—

1. If production was in line with the budget, expense should also agree with budgeted estimates.
2. If production increased, expense should increase in a lesser proportion.
3. If production decreased, expense should also decrease though possibly not in as large a proportion as volume.

Experience will soon teach whether actual expenses incurred are out of line with budgets, having in mind also the actual production volume. (See Figure No. 60.)

Where each departmental foreman is responsible for a departmental expense total, arrangements should be made to forward to him an expense summary each week or each month, showing the results achieved in the previous period. Explanations are frequently requested for excesses, and plans are formulated whereby reasons for such excesses would not recur. Manufacturing expenses generally consist of a large number of items, and therefore every attempt should be made to trace causes and responsibility for each discrepancy. Any necessary alteration could then be made in the right manner.

The foregoing will give an outline of the steps to be taken to control the various manufacturing expenses. Naturally it will sometimes be found that budgetary allowances have been cut too fine and it may then be necessary to allow the increases to stand and to carry on month after month. Only the individual circumstances relating to the particular account at the time can be used as a basis for decisions regarding necessary action, and each organisation should institute those steps most applicable to the position and factors being examined.

FIGURE No. 60.

MANUFACTURING EXPENSE BUDGET.

Particulars	July Budget	July Actual	July Difference	August Budget
Power and light ..	79 9 7	80 14 10	1 5 3	80 0 0
Supplies (Various)	28 17 6	29 15 6	18 0	31 12 6
Machine Parts and Repairs	28 9 6	16 13 11	**11 15 7**	28 12 0
Insurance—Workers' Comp.	33 0 0	33 0 0		34 0 0
Insurance—Fire ..	38 15 0	38 15 0		38 15 0
Sundry Services ..	58 11 6	55 19 3	**2 12 3**	64 4 0
Depreciation—Machinery and Equipment	191 0 0	191 0 0		192 0 0
Rates	10 6 8	10 6 8		10 6 8
TOTAL	£468 9 9	£456 5 2	**£12 4 7**	£479 10 2

Figures in heavy black type indicate budget greater than actual.

Administrative Expenses Control.

Generally these expenses will be found to vary very little. Even marked fluctuations in sales and/or in factory production will have little effect. Most of the items are fixed in nature and only exceptional departures from anticipations when the budget was prepared should cause changes in most of the accounts making up this classification.

When dealing with the preparation of this budget, stress was laid upon the excellent results that can be achieved through the adoption of units as bases for analyses and comparison. Where these have been prepared in the budget, it will be a simple matter to compare the budgeted ratios with the actual results. This is an excellent method of localising differences very quickly and ascertaining the exact reasons for expense deviation.

Even where the unit system is not adopted control can be exercised by comparing the amount allowed in the budget with the totals actually spent. The causes of discrepancies will readily show themselves upon inquiry. Where these are warranted no further action need be taken, while action to avoid unnecessary increases is generally a comparatively simple process. (Figure No. 61.)

Cash Budget Control.

To obtain the greatest value from the cash budget, it is essential to make constant examination of the actual cash position. As in the case of all other budgets the preparation of the plan is the first portion of the work, but this is useless unless endeavours be made to harmonise actual results with those anticipated. Especially in relation to finance it is very easy for the position to get out of hand, and this may have serious results until such time as the state of affairs is rectified. This is particularly so where a concern suffers from any shortage of working capital, but even in other cases, the benefits resulting from close control over the financial position should be apparent.

Method of Comparison—Receipts.

Where there has been no evident reason for a departure from budgeted figures, the control of the cash budget resolves itself into an examination of actual results and a comparison between budget and actual to see if the cause of any differences can be located. Thus, in its preparation provision may have been made for cash collections coming from book debts perhaps almost solely. Certain turnovers may have been estimated by the sales department and these translated into book debts, an attempt being made to calculate just when these book debts would be

FIGURE No. 61.

ADMINISTRATIVE EXPENSE BUDGET.

Particulars	July Budget	July Actual	July Difference	August Budget
Central 1—				
Printing and Stationery	21 6 8	16 15 9	**4 10 11**	21 6 8
General Expenses	20 0 0	18 19 3	**1 0 9**	20 0 0
Postages and Telegrams	27 3 0	29 14 2	2 11 2	27 3 0
Office Expenses ..	18 6 8	18 6 8		18 6 8
Audit Fees ..	21 13 4	21 13 4		21 13 4
Insurance	5 3 4	5 3 4		5 3 4
Deprectn. on Furn. and Fittings ..	8 6 8	8 6 8		8 6 8
Salaries and Wages	392 9 0	403 11 5	11 2 5	417 10 0
Sundries	14 11 0	23 9 5	8 18 5	14 11 0
Exchange	3 14 3	4 1 2	0 6 11	3 19 6
Discounts	214 7 0	236 4 10	21 17 10	223 10 0
Total	747 0 11	786 6 0	39 5 1	781 10 2
Plus Proportion of Management Expenses	140 4 4	140 4 4		140 4 4
Total	£887 5 3	£926 10 4	£39 5 1	£921 14 6
Territories—				
Central 1	887 5 3	926 10 4	39 5 1	921 14 6
Central 2	581 2 10	574 2 5	**7 0 5**	596 14 9
North	367 19 4	393 1 6	25 2 2	378 10 5
East	322 18 11	324 14 2	1 15 3	321 16 9
West	341 1 3	350 9 3	9 8 0	339 5 11
South	114 15 3	117 1 9	2 6 6	112 9 6
Total	£2,615 2 10	£2,685 19 5	£70 16 7	£2,670 11 10

Figures in heavy black type indicate budget greater than actual.

received. An average rate was perhaps arrived at and it was estimated that the total would represent, say, thirty-five days of actual sales. Control would therefore be directed towards seeing that the actual collections have been in accord with what was estimated, and particularly that the average rate has not exceeded the thirty-five day mark. Where these figures have not been realised, inquiries should be instituted so that the reasons become apparent, and then it may be necessary to make a drive on collections to put the matter right. Remedial action taken in time may prevent serious retrogression. Any other sources of cash receipts should be treated in a similar manner, and control over collections will generally be found to be a fairly simple matter.

Disbursements.

As far as disbursements are concerned control is not quite so simple. Here the general position is a result of a combination of many more factors, and an analysis of each one is necessary, because two favourable factors may be outweighed by some unfavourable ones. Any discrepancies in the budgetary figures of the other activities of the business, for example purchasing, payroll etc., must make themselves felt ultimately in the cash position. Heavier purchases than those allowed for will in due course result in heavier payments for the goods bought, and this factor alone may have an appreciable effect. The purchasing agent, considering a price too good to lose, may buy much larger quantities than he originally intended, leaving the financial section to foot the bill. Thus it is possible that the effects of some such action may be the factor in an adverse cash balance, even though the amount expended on other outgoings may be lower than was anticipated.

Effects of Rising Turnovers.

The effects of rapidly rising turnovers must also be watched in their relationship to the cash position. It must be remembered that there will usually be a drag between the period of selling and the period of collection, and if by any chance the turnovers do rise quickly, the check on the finances must be strengthened. The cash position on a falling turnover, providing production and inventories are kept in line with the reduction, generally becomes easier for a time while demands of larger turnovers, larger productive policies and possibly larger inventories may make finance difficult.

Figure No. 62.

FINANCIAL BUDGET.

	July Budget	July Actual	July Difference	August Budget
Cash in Bank	15,432 10 0	15,432 10 0		15,140 9 0
Collections ..	31,856 5 0	33,165 4 6	1,308 19 6	30,495 10 0
Sundry Income				
Bank Loans ..				
	£47,288 15 0	£48,597 14 6	£1,308 19 6	£45,635 19 0
Disbursements as below ..	32,148 6 0	31,751 17 7	**396 8 5**	28,784 16 0
Cash at Bank end of mth.	£15,140 9 0	£16,845 16 11	£1,705 7 11	£16,851 3 0
Disbursements:				
Wages ..	2,843 15 6	2,879 1 2	35 5 8	3,298 11 9
Purchases—Mat. ..	9,437 5 8	9,164 11 0	**272 14 8**	5,386 13 6
Freights ..	215 0 0	201 7 0	**13 13 0**	219 0 0
Manufact. Expenses	187 6 8	156 14 5	**30 12 3**	201 0 7
Excise	14,624 3 4	14,428 1 10	**196 1 6**	14,720 0 0
Management Expenses	347 13 4	347 13 4		347 13 4
Administration Exs.	2,096 10 0	2,142 3 5	45 13 5	2,105 0 0
Advertising	286 11 5	290 1 7	3 10 2	241 5 3
Marketing Expenses	2,110 0 1	2,142 3 10	32 3 9	2,265 11 7
Machine Purchase				
Bank Repayments				
Dividend				
	£32,148 6 0	£31,751 17 7	**£396 8 5**	£28,784 16 0

Figures in heavy black type indicate budget greater than actual.

Necessary Budget Amendments.

This position is set out on the accompanying statement. (See Figure No. 62.) Where changes are made in the selling and production budgets, the effect on the cash position must be noted. It is useless being misled as to the stability of the financial position because of a budget which requires alteration to conform with actual conditions. Even where there are factors which have an effect for only a time and are afterwards self-compensating, it is always advisable to re-examine the position as it will arise during the period until the budgeted figures are regained. This policy will make for certainty regarding the future position, and is a very necessary procedure especially where working capital is small and the margins are fine.

Consideration of the work necessary to preserve desired equilibrium in relation to the cash position is bound up with the question of operating capital, which was dealt with in Chapter V.

Conclusion.

It is considered that sufficient has been said in relation to the question of Control to make it possible to understand the desirable procedure. It must be remembered that in relation to Fixed Budgets the question of control is largely limited to seeing that actual figures approximate as closely as possible to the Budget. Where the budget sales figure is not realised, or is more than realised, it is often a difficult matter to state definitely whether expenses are in line with such decrease or increase. It may be possible to obtain some estimate of what should be the effect upon expense totals but this is sometimes in the nature of guess-work. Any closer examination and analysis of the position brings us into the sphere of Variable Budgeting, which is considered later. It is possible, however, by strict control, to make the Fixed Budget a most acceptable and helpful instrument of management.

Chapter VII

RETAIL MERCHANDISE BUDGET

Object of retail budgets—definitions—essentials of budget preparation—budgets included—the merchandise budget—planned sales—stocks—mark-downs—mark-ups—purchases—the co-ordinated merchandising budget—open-to-buy—essentials of the merchandising plan—objections—the expense budget—classification of expenses—expense control—advertising—monthly appropriations—advertising medium appropriations—advantages—the financial budget—the profit and loss account—conclusion.

Whilst all budgets differ at some points and take into account the peculiarities of each individual business, naturally there is a similarity between businesses of the same kind. Thus one sheet metal factory would have similar problems to another. Furthermore, practically all manufacturing businesses would have at least some salient points of similarity. Each one would have its productive section, its raw materials and its manufacturing activities.

In the case of the retail store, however, the manufacturing portion of the enterprise is displaced by the merchandising operations. In place of the production budgets, therefore, a merchandising budget is prepared. It is now proposed to outline a system of budgetary procedure suitable for a retail store, as there are important distinctive features as against budgeting for a manufacturing business.

Objects of Retail Budgets.

The objects of budgets to cover retail trade are the same as those in the case of manufacturing businesses except, of course, that the very nature of the tasks performed in the two types of businesses differ. The final aim—the making of maximum profits—is the same, and the retail merchandise budget is a plan or series of plans whereby the whole of the operations of the business, including the merchandising, the expenses, the finance and any other relative factors, are estimated, and the figures thus prepared are adopted as a chart or guide for the period covered.

Definitions.

It is necessary at the outset to obtain a clear idea of the meaning of several terms which will be repeatedly used. Goods or merchandise are purchased at cost price and a retail price is marked against each item. The difference between these two, the cost and retail prices, is known as "Mark-up." Under certain circumstances it may be necessary to reduce this price on some or all of the articles, in which case the amount of the reduction, that is, the amount that the retail price is subsequently reduced, is known as the "Mark-down." The number of times that a stock can be purchased and sold during a year is known as the "Stock-turn." A business doing £100,000 turnover during a year, on an average stock of £20,000 would have a Stock-turn of five. If a profit is made on each turnover of the stock, naturally the larger the number of turns the larger the total profit. Turnover may always be calculated on either a cost or a retail basis, but it is important to remember that sales and stock values should always be on the same valuation basis.

Essentials of Budget Preparation.

1. The budgetary period must be fixed before commencement and the methods of budgeting must be agreed upon.
2. The budgetary figures must represent a realisable and anticipated programme.
3. The various budgets should be prepared in as simple a form as possible, to facilitate correct interpretation by those dealing with the figures.
4. The persons to be held responsible for differences should have some voice in the preparation of the figures.
5. There should be some provision for flexibility to enable alterations to be made where actual results show these to be necessary, and monthly adjustments should be made where such are demanded.

Budgets Included.

The following budgets are prepared as part of the coordinating plan—

1. Merchandise Budget.
2. Expense Budget.
3. Advertising Budget.
4. Finance Budget.

In addition to the foregoing an estimated profit and loss statement should be prepared and the anticipated results extended through to the balance sheet, which would show the anticipated position at the end of the budgetary period.

The Merchandise Budget.

This, together with all associated budgets, is usually prepared twice a year, firstly to cover, say, Spring and Summer and secondly Autumn and Winter. Sometimes, of course, shorter periods are taken and it is often quite simple to compile a monthly merchandise budget. Generally each department prepares the merchandising figures relating to its own particular operations and it is usual for the departmental buyer to be consulted. This is in accordance with the principle of allowing those responsible for the carrying out of operations to have some hand in the preparation of the figures. The various departmental plans are passed to an executive whose duty it is to review them and make any adjustments necessary to coordinate the working of various portions of the business Finally, after acceptance, the various plans are combined into a master merchandising budget, which operates as the guide for the whole of the merchandising activities of the business. In the small store it is not unusual to find that an executive (or possibly the proprietor) prepares the whole of the figures for the business.

The necessary factors to be considered in the preparation of this budget are—

1. Planned Sales.
2. Planned Stocks.
3. Planned Mark-downs.
4. Planned Initial Mark-ups.
5. Planned Purchases.

1. *Planned Sales.*

The whole of the operations of the business naturally depend upon what sales can be expected during the budgetary period, and, as the other figures used in completing the budget plan bear a direct relationship to the estimated sales, it is necessary for all forecasts to be made carefully. The following factors should be considered—

1. Sales for the corresponding month in previous years.
2. The rate of growth of the departmental sales over past years, but particularly over the last two years.
3. General business conditions.
4. Changes in price levels.

5. The force and distribution of competition.
6. The influence of style factors.
7. Plans for special efforts.
8. The occurrence of special holidays, such as Easter.

Each of the foregoing factors should be taken into account, but it must be realised that the effect upon sales of some may be much more important than others. In addition, in special cases there may be other considerations calling for attention. Where thorough examination of all such problems is made, reasonably close estimates can usually be arrived at, though it is possible for special conditions to upset calculations. For example, a week of really bad weather or bitterly cold conditions may cause a serious fall in sales, which is apparently not made up in succeeding months. Such matters cannot be foretold, except in general terms.

In addition to the foregoing it has been said that—

"The factors which would influence the buying and selling estimates would embrace—

(a) Every-day requirements for staple lines.
(b) Seasonal fluctuations—style requirements and variations.
(c) The trend of market conditions regarding raw materials.
(d) The prosperity enjoyed by the community as a whole.
(e) The competition existing among the manufacturers in the lines stocked. Thus, if there is no monopoly regarding supplies, the stock required may be lower than if purchases have to be made from a limited number of suppliers because of the quicker deliveries which can be obtained.
(f) The amount of stock to be carried, and the number of times it should be turned over during the trading period.
(g) Due care of slow moving lines, and the proper valuation of them at the end of seasonal trade and financial periods. In some instances, individual line stock records are practicable, and are of great value, both to the buyer and sales manager."

("Budgetary Control," by L. A. Brumby, from the Australian Congress on Accounting, 1936.)

2. *Planned Stocks.*

At all times adequate stocks are a necessity, and the planning of proposed quantities and amounts is always of the greatest importance. What may be a sufficient stock during one period

may be quite inadequate for another, and the amount will frequently vary with such factors as the type of merchandise, the time element of delivery and the competition the store faces. Sufficient stock must be maintained to cater for customer demand, yet stocks should be kept at a safe minimum consistent with this factor, so as to promote the greatest possible economy in capital. Proper assortments must be maintained in order to ensure the desired turnover and a proper relationship must be kept between the monthly sales and the opening and closing stocks.

Therefore, if a turnover of three is desired for the Spring and Summer seasons in a particular department, the stocks would be planned to cover an amount which would give as an average retail stock figure one third of the planned sales figure. Stock fluctuations are usually not as great as those in monthly sales. This is not inconsistent with having a stock turnover ratio of any particular amount, as such ratio is purely an average. Thus, at the beginning of the season it may be necessary to make arrangements to have a stock which is half as large as the planned sales, whilst at the end of the season, the stock may be down as low as one quarter or one fifth of the estimated turnover.

Consideration of past figures will show the relationship which has existed between stock and sales during previous periods, and if this has so far been satisfactory it may be decided to continue on this basis. This can be worked out in relation to each month of the particular season. Generally, the highest peak in stocks will be found just prior to the period when it is anticipated that the highest sales figure will be reached. Only past experience, modified by present conditions, can show what stocks should be carried, but the stock-sales ratio is a very valuable figure for comparative purposes, even though it may not always be an infallible guide for a buyer.

3. *Planned Mark-downs.*

It has already been pointed out that a Mark-down is a reduction in the retail price of merchandise. As a percentage, it is always calculated in terms of net sales. The value of planning in this connection operates in two ways—

1. By suggesting methods to eliminate or reduce the frequency of certain causes.
2. By securing more prompt action and consequent smaller mark-down percentages.

In planning mark-downs, the first step is to inquire into causes. Little success attends any plan based simply upon a lower percentage estimate without due note of the causes govern-

ing such matters. It is impossible to prepare a list of causes which would operate in any business, but the following is a representative one—

Injudicious initial pricing.
Poor buying.
Lack of careful planning of stocks.
Ineffective systems for detecting slow moving merchandise.
Poor sales promotion.
Special sales.
Shopworn, soiled or damaged goods.
Broken assortments or remnants.
Style or model pieces.
Competition cutting.
Colour and quantity reductions.
General allowances.

After due examination of the various causes and the figures shown for previous periods, it is possible to estimate current figures, having in mind any modification necessary because of present or likely future conditions. For example, changes in style may play a large part in the amount of mark-down. In addition to the amount, however, the period of such mark-downs has also to be considered. It is generally necessary to apportion the various items over the months covered by the budget and each month will vary somewhat. Thus, in any period it may be found that practically no mark-downs occur within the first month or perhaps two months, while the stock is fresh and the season young. During the third month some slow selling lines may be reduced, but the greatest reductions would not be made until the end of the season.

4. *Planned initial Mark-ups.*

The initial mark-up is the difference between cost and the retail value of the total merchandise handled in the department. Naturally this mark-up must be large enough to cover the whole of the estimated expenses, mark-downs and shortages, and also to leave the required net profit. The following formula has been worked out to arrive at the percentage of initial mark-up required—

$$\text{Initial Mark-up Percentage equals} \quad \frac{\text{Expenses, plus Reductions, plus Profits}}{\text{Sales, plus Reductions}}$$

For example, the initial mark-up in the case of a department whose planned sales are £1,000, whose expenses are 25 per cent

of sales, mark-downs are 5 per cent and shortages 1 per cent, whilst desired profits (net) are 8 per cent, would be—

$$\frac{\text{25 per cent, plus 5 per cent, plus 1 per cent, plus 8 per cent}}{\text{100 per cent, plus 5 per cent, plus 1 per cent}} \text{ equals } 36 \cdot 8 \text{ per cent}$$

Generally the two important factors to be considered are—

1. The amount of mark-up allowed by competitors' prices.
2. The estimated rate of turnover.

While high mark-ups are desirable, the amount is often limited by competition, as, if too high a percentage is attempted, sales will not result. It is usual to find that the higher the rate of stock-turn, the lower is the amount of mark-up which is actually required, because profit is more often earned and because goods remain in stock for a shorter period and this means a decrease of certain expenses, in addition to mark-downs. The amount of mark-up which can be obtained can usually be closely estimated as a result of past experience.

5. *Planned Purchases.*

This figure can easily be calculated once the amount of sales, mark-downs and stocks have been estimated.

Planned Purchases equal

Sales, Plus Mark-downs, Plus Increases (or Minus Decreases) in Stocks.

Thus, where sales amount to £5,000, planned mark-downs £250, and it is proposed to increase stock by £500, purchases must amount to £5,750. This formula gives the planned purchases at retail value. If it is desired to convert this into purchases at cost, the figures can be determined by multiplying the retail planned purchases by 100 per cent, less the initial mark-up percentages. Thus, retail purchases of £10,000 would mean a cost value of £6,000, in the case of a 40 per cent mark-up.

The Co-ordinated Merchandising Budget.

Once the estimates set out in the foregoing paragraphs have been made they are included in a Merchandising Plan similar to that shown in Figure No. 63. This then becomes the working basis for the store during the coming period. Whilst every effort should be made to keep as close as possible to these estimated figures, it is necessary to exercise judgment in the matter for many conditions may arise to make it advisable to depart somewhat from the estimate. It must nevertheless be remembered that changes should only be made where they are definitely

warranted because of actual conditions. Furthermore, alterations to any one budget must have an effect upon each of the others. For example, if as the season advances it is found that actual sales vary from the estimates, purchases of stock may also have to be altered so as to preserve the same stock figures.

The actual amount to be allowed for purchases can be obtained by taking the Planned Purchases figure,

Plus or minus

the amount by which the actual purchases of the previous month failed to reach, or exceeded, the planned purchases,

Plus or minus

the amount by which actual mark-downs exceeded or fell short of planned mark-downs,

Plus or minus

the amount by which the actual stock at the 1st of the previous month fell short of or exceeded the planned stock,

Plus or minus

the amount by which actual sales exceeded or fell short of planned sales.

The following figures will show the method of arriving at the amount of purchases to be made—

Planned Stock at retail, March 1st	£4,000
Actual Stocks at retail, March 1st	4,200
Planned Sales—March	2,400
Actual Sales—March	1,600
Planned Purchases at retail—March .. .	2,500
Actual Purchases at retail—March	2,000
Planned Mark-downs, March	180
Actual Mark-downs—March	220
Planned Purchases at retail—April	2,860

Planned Purchases at retail for April			£2,860
Adjustments.			
Planned Purchases, March ..	2,500		
Actual Purchases, March	2,000		
Increase April Planned Purchases		500	
Actual Mark-downs, March	220		
Planned Mark-downs, March ..	180		
Increase April Planned Purchases		40	
Actual stock at retail, March 1st	4,200		
Planned stock at retail, March 1st	4,000		
Decrease April Planned Purchases		**200**	
Planned Sales—March	2,400		
Actual Sales—March	1,600		
Decrease April Planned Purchases ..		**800**	
Net Adjustment			**460**
Adjusted Planned Purchases for April (retail)			£2,400

Open-to-Buy.

This term is used to denote the amount of merchandise which may be ordered for delivery during the balance of any period. The figure appearing in the Open-to-buy is the amount by which adjusted Planned Purchases exceed outstanding orders for delivery during the period. If, for example, the Planned Purchases for March are £2,500, and orders to the extent of £1,800 have been placed for delivery in March (even though the whole of these goods have not yet been received) the amount of the Open-to-buy would show at £700.

Whilst the Open-to-buy at the 1st of each month gives to the buyer the sum which may be used for the purchase of merchandise during the month, it does not, of course, distribute this planned purchase figure throughout the month for him. It can be spent during the first week or during the last week, or it can be spread evenly throughout. It does, however, act as a check upon buyers and as a predetermined standard which should be adhered to as closely as possible. Nevertheless, perhaps because of new lines or fashions, circumstances will arise wherein it will be necessary to order extra merchandise not originally allowed for.

Where it is thus necessary to exceed the Open-to-buy, it is frequently the policy to have the extra amount sanctioned by the merchandise manager. This has the effect of keeping purchases largely under control, as it will generally be found that sanction will not be requested without good reason. Care must, however, be exercised to see that where purchases should be increased in order to cover certain factors, the amount of the Open-to-buy is not treated as being unalterable. Therefore, whilst the buyer should make every effort to obtain the desired end without increasing the appropriation (for example by cutting down on other lines, thus spreading his purchases in a more beneficial fashion) further amounts should be added to the Open-to-buy where they are definitely warranted. The fact that the amount must be authorised is generally a sufficient control on these matters, especially as the most frequent causes for increases, such as fashion changes or unseasonable weather, may be outside the control of the buyer.

Essentials of the Merchandising Plan.

As a method of control, the success of any plan will depend upon—

1. The accuracy of the predetermined calculations.
2. The flexibility of the budget to meet changing conditions.
3. The facility with which adjustments are made when actual operations warrant them.

Accuracy is, of course, of fundamental importance and though 100 per cent is seldom possible, every care should be taken to ensure that the estimates finally adopted are as close as a thorough examination of all pertinent factors will allow. Some errors will have little effect upon the plan as a method of control, providing that the percentage of such errors is not great, but figures entered haphazardly depend upon chance and cannot be used as a basis to control operations. As absolute accuracy is seldom possible, it is desirable to have a degree of flexibility in the budget, so that alterations can be made to bring the plan again into line with actual conditions. These adjustments should be made quickly, and the merchandising plan should be such as to allow this facility.

Objections to the Merchandise Plan.

The following objections have been urged against the preparation of such a plan—

1. Buyers object because they feel that their freedom is limited. This contention is generally the result of either ignorance as to the true nature and objects of the plan, or, alternatively, because of nervousness about realising the figures set down. Actually the plan ensures a buyer proceeding with merchandising in an orderly manner, but it does not under any circumstances interfere with or eliminate freedom of judgment. On the contrary, it helps correct judgments to be made and acts as an aid to control. It is useless a buyer saying that he intends increasing his sales by 10 per cent, decreasing his mark-downs by 5 per cent, and increasing his stock turnover by 25 per cent, without following the results through to their logical conclusion and deciding upon a plan of action showing how these aims are to be accomplished.

2. Some stores feel that they are too small to use merchandise planning profitably. This objection, also, cannot be sustained. It should be obvious that no store is too small to plan its operations ahead. The plan may possibly not be in great detail, and in certain cases may not be divided into departments, but the value of having a carefully prepared guide chart must be as obvious in the case of the small business as of the large one.

3. The variable element in merchandising is cited. It has been found that sales increases and profits tend to concentrate on certain lines and a considerable portion of the total profit is often to be found in what is, after all, a small proportion of the total lines handled. An increase in sales volume does not necessarily mean an increase in profit. In individual lines, too, there will be some which will increase, some which will remain constant, and some which will show decreases, all because of factors largely outside the control of the store itself.

The American "Merchandise Control Manual" gives a number of illustrations of this factor, pointing out that in one store, women's dresses decreased 13·8 per cent, but showed a profit of 7 per cent, whilst another store decreased 12·5 per cent, but showed a profit of 10·1 per cent. Similarly, in misses' coats department one store showed a decrease of 15 per cent, but a profit of 9·3 per cent, whereas another store increased 17·6 per cent and yet showed a loss of 4·8 per cent. A third store decreased 14·2 per cent and showed a profit of 2·2 per cent. The case of jewellery was rather striking, for there was an increase in ten stores, but all except three showed a loss. Similarly, there was a conspicuous increase in handbags in fourteen stores, but only four of these showed a profit. The foregoing figures show the differences that are experienced in similar departments of different stores, but there are parallel instances in different departments of the one store. For example, in one place hosiery showed a decrease of 13 per cent, but with a profit of 4·8 per cent, whilst gloves showed an increase of 27·9 per cent, but yielded a loss of 9·1 per cent.

These instances could be multiplied, and in commenting on such factors, the Manual states—

"It is this variable element—this shifting of sales and profit increases from one line to another—that has discouraged planning, and has caused many store executives to trust more to their ability to jump aboard a profit making line when it appears—unhampered by any carefully worked out plan. Any one the least bit doubtful in regard to the practicability of planning might find sufficient evidence in the study of some of the relationships between plans and results to make him increasingly pessimistic. On the other hand, there is strong evidence that many of these plans were defeated more by the way in which they were first set up than because there was nothing to be gained from planning. It is this method of planning that should be the basis of discussion. It is evident that this tendency toward a focusing of net profit on a few lines makes more hazardous the whole merchandising operations and likewise it increases the desirability of more careful planning. Planning can never be scientific, but it can be more nearly scientific than it has been in some stores."

None of the foregoing objections can really be sustained as actual reasons against the adoption of a merchandising plan. They may, and of course do, lay stress upon the need for a careful examination of all factors before the figures are finally passed.

Figure No. 63 sets out the method of co-ordinating various figures which together make up the merchandise plan. These figures then form the basis for the next half year's operations.

FIGURE No. 63.

MERCHANDISE PLAN.

Dept. No. 12.
Merchandise Neckwear.
For a Period Beginning Feb. 1st, 1931.

	Last Year	Plan	Result
% of Purchase Mark-up	37·97	39	
% of Mark-downs	6·56	5	
% of Maintained Mark-up	33·90	35·95	
Turnover (Yearly Rate)	4·4	5·5	

	February	March	April	May	June	July	Total
Sales—							
Last Year	£4,210	£5,602	£6,288	£5,514	£4,951	£4,063	£30,628
Plan This Year	4,300	6,100	6,000	5,500	5,000	4,000	30,900
Actual	4,116	6,113					
Mark-Downs—							
Last Year	310	78	50	102	521	954	2,015
Plan This Year	200	100	250	100	350	500	1,500
Actual	205	90					
Retail Stock—1st of Month—							E.O.M.
Last Year	10,800	11,920	16,100	16,010	15,198	13,950	12,212
Plan This Year	9,400	12,400	12,200	12,000	11.500	11,000	9,500
Actual	9,400	11,822	11,810				
Retail Purchases—							Total
Last Year	5,640	9,860	6,248	4,804	4.224	3,279	34,055
Plan This Year	7,500	6,000	6,050	5,100	4,850	3,000	32,500
Revised Plan							
Actual	6,743	6,191					
Cost Purchases—							
Last Year	3,582	5,810	3,936	3,146	2,698	1,951	21,123
Plan This Year	4,575	3,660	3,690	3,111	2,959	1,830	19,825
Revised Plan							
Actual	4,094	3,781					

Dated Jan. 3rd, 1931. *Made by* J. Jones *Buyer* *Agreed to*
S. Smith,
Merchandise Manager

(Adapted from "Merchandise Control Manual" of the National Retail Dry Goods Association.)

The Expense Budget.

Once the Merchandise Plan or Budget has been compiled, the next step is to complete estimates of the total amount of expenses likely to be incurred in carrying out the plan. The expense budget is a carefully prepared estimate of the planned expenses of the store and is subsequently used as a means of controlling and checking the actual expenses.

The objects of an expense budget are—

1. It seeks to adopt in relation to expenses the scientific policy of planning and then attempting to make actual conditions conform to such plan. Instead of simply analysing expenses after they have been incurred, the attempt is made to lay down the programme which is considered to be a reasonable statement of what should be obtained, and then to see that actual conditions conform to such programme as nearly as possible.
2. It endeavours to co-ordinate the activities of the various functions of the business of the store, especially in relation to amounts to be paid to cover expenses, so that such amounts are in satisfactory ratio to services rendered or results expected.
3. It helps to fix responsibility for the amount of various expenses to be incurred and enables increases to be taken up immediately with the officers concerned.

Usually the expense budget is prepared upon the basis and for the same period as the merchandise budget. Usually this means that figures for each of six months are prepared, the total representing the six months' budget. In order to complete these estimates due regard must be taken of—

1. *Past figures covering the same period.*

Obviously, an examination of the expenses incurred in relation to various merchandise programmes as shown during the previous years will furnish an excellent guide to what can be expected for the period being covered by the budget. It is true that certain conditions may necessitate increased expenses or may allow of decreases in certain directions. Here, again, however, the trend shown by figures relating to previous periods must be taken into account, especially if it is considered that the trend will be maintained during the current six months. Generally such expense will have been shown as a percentage of either sales, purchases, stocks or some other gauge, and these percentage ratios can often be used to arrive at the desired estimated expenses.

FIGURE No. 64.

BUDGET OF OPERATING COSTS.

	March		April		May		June		July		August		Total	
	£	%	£	%	£	%	£	%	£	%	£	%	£	%
Administrative—														
Executive Office														
General Office														
Superintendent's Office														
General Store														
Total Administrative ..														
Occupancy—														
Heat, Light and Power														
Elevators														
Cleaning														
Building Repairs														
General														
Total Occupancy														
Publicity—														
Advertising Wages and Hours ..														
Decorating														
General														
Total Publicity .. .														
Buying—														
Buying Wages														
Receiving Room														
Special														
General														
Total Buying .. .														
Selling—														
Selling Wages														
Adjustments . ..														
Delivery Room . . .														
Automobile Delivery .. .														
General														
Total Selling . ..														
Total Operating Cost														
Expected Sales														

(From "Controllers Congress, National Retail Dry Goods Association," U.S.A.)

2. *The present proposed merchandising plan.*

Whilst past figures are valuable, their influence must be gauged in relation to the proposed operations. The intentions in this regard may be such as to alter considerably the expenses likely to be incurred from those which have actually resulted in the past.

Classification of Expenses.

Frequently, in addition to the natural classification of expenses according to accounts, a functional division is made. (See Figure No. 64.) The common divisions in such a case would be—

1. *Administrative.*

This would include the general administrative and executive expenses not chargeable to any particular division of the store.

2. *Occupancy.*

All expenses arising from the use and maintenance of store buildings, fixtures, equipment and furniture would be included under this heading.

3. *Publicity.*

This would cover all items which could be looked upon as advertising, including, in addition to ordinary forms, such matters as window displays, fashion parades, signs and ticket-writing.

4. *Buying.*

The total of all costs incurred in buying merchandise—including buying office expenses, receiving, checking and marking goods—would come under this heading.

5. *Selling.*

All amounts incurred in selling merchandise from the time of delivery into the department until transferred to the customer would be shown in this section, which is usually easily the largest item in the expense budget.

Sometimes the various items of expenditure are examined and estimated according to the various accounting classifications. Alternatively, estimates are worked out on a departmental basis as far as possible and those items which cannot be attributed to any particular department are finally added. A third method of approach is suggested by the foregoing divisions of expenses, and the various items which can be included in each of those classifications are calculated, the totals forming the basis of the expense budget. As a rule little difficulty will be experienced in deciding which is the best method, and in completing the

estimate of expenses which are likely to be incurred in carrying out the merchandising programme already decided upon.

In "Budgetary Control" (previously referred to) it is stated that estimates of expenses should provide for—

"1. Cost of Buying Department:
   - (a) Salaries of buyers and assistants.
   - (b) Part of salary of proprietor or manager, proportionate to time spent in buying.
   - (c) Travelling expenses of buying trips.

2. Cost of Selling Department:
   - (a) Wages of all persons engaged in selling.
   - (b) Proportionate part of salary of proprietor or manager.
   - (c) Advertising.
   - (d) Paper, twine, packages, and such like.

3. Cost of Delivering Goods:
   - (a) Wages of assistants.
   - (b) Contracts for delivery.
   - (c) Upkeep and running costs of motors.
   - (d) Rent (or interest on capital) of garage—including rates.

4. Management or Indirect Expenses:
   - (a) Proportionate part of salary of proprietor or manager.
   - (b) Salary of accountant, clerks and typists.
   - (c) Audit.
   - (d) Stationery, telephone, etc.
   - (e) Light and power.
   - (f) Insurance—Fire, Employers' Liability.
   - (g) Repairs.
   - (h) Depreciation.
   - (i) Sundry items."

Expense Control.

Once the budget has been approved and the period entered upon, every effort should be made to see that the expenses actually incurred are kept within the limits set. Frequent checking of actual expenditures against budgeted figures, attempts to keep in line with planned figures, definite placing of authority for the authorisation of all expenses, and the means for revising the original planned figures if the necessity for changes arises—all of these matters should be attended to and provision made for the procedure to be followed. When a department's expense figures begin to vary from the budget figures, the buyer should be called upon for an explanation. If

proper reasons can be given, the budget figures should be revised in the light of the newer conditions; if there is no adequate reason, adjustments must be made as quickly as possible to bring the actual expenses into line with the estimates.

Advertising Budget.

Included in the expense figures will be found the advertising appropriation. This item is often of large amount, and it frequently receives more attention and consideration than any other line of expense. The amount decided upon is generally determined according to—

1. Past experience.
2. Present needs.

It is subsequently allocated (1) to monthly expenditures; (2) to departments; (3) to media.

Statistics showing the proportion of advertising expense to actual sales over previous periods, adjusted to take into account current conditions, will help in the determination of the amount to be spent. Where the merchandising plan does not differ much from that of previous periods, it is probable that the advertising appropriation will be similar to that of the past. Where, however, there is some radical departure from past figures, it may be necessary either to increase or decrease the advertising appropriation perhaps to a marked extent. Once the total amount to be spent over the period has been ascertained, a division into monthly amounts should be made. Sometimes this division is made according to expected monthly sales volume, whilst at others particular conditions affecting the need for advertising are taken into account. For example, special sales may require special advertising; Xmas or other holiday seasons may demand extra expense. It is possible that in both of these cases the extra sales gained may mean that the advertising cost per pound of sales may be smaller than usual. Again, during slack periods, or upon occasions of intense competitive advertising, appropriations are sometimes increased in an attempt to lift turnover or meet competition. The best method of determining the monthly advertising allowance is to apply to the planned sales for each month an advertising percentage figure adjusted in the light of the particular needs of each month.

Monthly Appropriations.

Where the merchandising and expense figures have been dissected according to departments, it is also necessary to divide

the advertising appropriation into amounts applicable to each department. Frequently the total appropriation is distributed to the various selling departments as a percentage of the planned sales, though all departments are not given the same percentage. As a matter of fact, percentage of advertising expense varies widely among the departments, primarily according to the nature of the merchandise. As advertising must attract people, not only to the department advertised, but to the entire store, it is often a wise plan to see that the merchandise having the strongest pulling power receives the greatest share of the advertising. Frequently, therefore, the advertising percentage is larger in style than in other departments.

Advertising Medium Appropriations.

In addition to dividing the total appropriation amongst departments, it must also be dissected to show how much it is proposed to allow to each particular advertising medium. A plan should be drawn up showing how each of these forms of advertising is to be distributed throughout the month. Thus, newspaper advertising would necessitate decisions as to what is to be advertised, on what days, and over what space. Generally, in allotting amounts for each medium, a certain sum is held in reserve to cover any unforeseen needs or desired increases.

Alternative Procedure.

Sometimes the total amount to be spent on advertising is arrived at by a reverse method. An investigation is carried out to ascertain what methods of advertising will be adopted. The amount to be expended in connection with each medium is then planned either before or after product or departmental appropriations have been investigated. The total advertising appropriation is built up in this way and comparison is then made with the actual amounts expended upon advertising in previous periods. Generally the total thus arrived at is reasonably close to the amount it is intended to spend because the figures shown for past periods are almost always treated as a guide. Thus radio advertising cost for last period may have been £1000 and it may have already been decided to increase the appropriation for this medium by 10 per cent, making a corresponding reduction in newspaper advertising. In actual practice this method varies very little from the one previously described and no difficulty should be experienced in arriving at a satisfactory appropriation figure once the policy of the organisation is known.

Advantages of the Advertising Budget.

The following advantages arise from budgeting advertising expenditures—

1. The amount to be spent is fixed in advance, and is approved by the management at the outset.
2. A definite plan is laid down setting forth what amounts are to be spent and how and when the expenditure should be made.
3. The departmental managers know in advance what help can be expected from advertising campaigns in relation to their own particular lines.
4. Carefully planned estimates are substituted for haphazard advertising policy, so that the advertising manager can concentrate upon getting maximum results from the amounts he has to spend.

A more detailed examination of the Advertising Budget was made in Chapter III.

The Financial Budget.

It is not proposed to discuss this in any detail, because it is very similar to any financial budget prepared in a manufacturing business, and as described in Chapter V. Of course, there are some items which are peculiar to the retail merchandise business, and these must be catered for. Generally a large portion of the total sales will be made for cash, and the amount to be expected can generally be calculated by an examination of ratios which operated in previous periods. Collections of book debts can be estimated in terms of previous experience and little difficulty will usually be found in arriving at the amount expected from other sources of income.

The total disbursements can also be estimated very closely, and the amount to be spent on the purchase of merchandise can be obtained by taking the figures from the merchandise plan and estimating what proportion of these must be paid for by cash and what terms will probably be available in relation to the balance. All operating expenses will have been covered by the expense budget, and special disbursements are generally fixed in amount.

The expected balance is, of course, easily arrived at by a deduction of disbursements from collections, and an examination of resultant figures will show whether any financial difficulties are likely to be met. Where necessary, early provision can be made for temporary loan accommodation to cover difficult periods. As with all other estimates, attention must be directed during the period towards turning the proposed figures into actual results.

The Profit & Loss A/c.

Once the figures mentioned in the foregoing paragraphs have been completed, a Trading A/c and Profit and Loss A/c can be prepared, showing the amount of net profit which would be realised if the whole of the budget figures were actually attained. These results can then be examined to decide whether they are satisfactory. The method of approach is, of course, similar to that adopted in connection with any manufacturing business, and upon completion of the estimates the procedure is also the same. If the figures are unsatisfactory, the various budgets may be returned to those responsible for their preparation, with instructions to review all figures in order to show improved results. This may mean that further examination must be undertaken to endeavour to increase sales, to decrease stocks, to decrease expenses, or to take some such other action, that could have a beneficial effect upon profits.

A simple form of abbreviated statement showing the net profit obtained is shown. In addition to this, of course, the ordinary Trading and Profit and Loss A/c would be prepared.

Conclusion.

It will no doubt be recognised that much written as descriptive of the manufacturing business can be applied to the retail merchandising concern, and concentration has been made in this chapter upon those factors which are more or less peculiar to conditions to be found in the latter. No attempt has been made to go into the matter in the greatest detail, because it is felt that with the description of budgetary principles contained herein and an outline of the methods to be adopted in the case of the retail store, sufficient data has been given to make it possible for a retail merchandise budget to be prepared successfully. Budgets to cover this type of business are, as a rule, not difficult, because the various operations fall into definite classifications, and the segregation of the different matters falling within the orbit of each particular budget is simple. If the factors explained in this chapter are borne in mind, and an intelligent, commonsense attitude is adopted towards any problems peculiar to any particular business, the completion of a satisfactory budget plan can be undertaken with confidence. Furthermore, it will generally be found that a satisfactory degree of accuracy in budgetary statements is much more quickly achieved in the case of the retail merchandise type of business than with the manufacturing business.

PART 2

VARIABLE BUDGETS

Chapter VIII

MULTIPLE BUDGETS

Introductory—development of variable budgeting—distinction between fixed and variable budgeting—method adopted—preparation of the multiple budget.

Introductory.

The foregoing pages have attempted to describe the preparation of the various budgets which, together, form a fixed budgetary programme for the business. It has already been mentioned that budgeting is a comparatively new development in business, instances prior to the war being somewhat isolated. In its early history the general concept seemed to cover the preparation of figures thought to be expressive of what the business could reasonably expect during the budgetary period but the whole idea was definitely static and at first it was assumed that that budget would largely lose its value which permitted any alteration in the original estimates—it was a fixed budget.

Underlying this idea also was the thought that once an alteration was permitted, a precedent would be established which would possibly ultimately mean that little or no attempt would be made to realise the estimated figures, for it would be a case of amending the budget to fit in with actual conditions, rather than making every effort to reach the estimates that had been planned. The whole weakness of this position lay in the difficulty of estimating with accuracy, sales and production for the coming period. Particularly with a fixed budget accuracy is the great essential. Obviously, where sales are estimated at £100,000, the value of the budget is considerably decreased where turnover reaches only £70,000. There would, of course, be many benefits attaching to the preparation of the budget and particularly to the planning concept, but most of the figures would be out of line from a control standpoint.

Development of Variable Budgeting.

With the development of emphasis on *"Control"* this drawback became increasingly evident. It was necessary to be able to compare results with what was planned in order that the budget might reach its real significance, yet more and more it became evident that this was difficult unless the planned and actual were reasonably in harmony. Research was therefore directed towards methods whereby inaccuracies would not so much interfere with budgetary control value. The first advance took the form of an analysis into various classes of expenditure, and ultimately there came the distinction between fixed, variable and semi-variable expenses.

The American National Industrial Conference Board, in its report on Budgetary Control in Manufacturing Industry (May 1925), dealt with this matter in the following terms—

"Where estimates of variable items, based on normal operations, usually 80 per cent to 90 per cent of capacity, have been prepared, a problem arises in the adjustment of such estimates so that they will co-ordinate with the varying volume of production, and thus be comparable from month to month or week to week, with the actual expenses. When such co-ordination is effected, the degree of economy used in expense administration can be determined. An occasional company divides the expenses between fixed and variable, but as yet makes no attempt to adjust it to volume of production. Comparisons with such unadjusted figures are futile. Some companies adjust the estimates in advance to three separate levels, to correspond with three volumes of manufacturing activity, maximum, average and minimum—or abnormal, normal and subnormal. One company specified 100 per cent, 50 per cent and 25 per cent. Some use a sliding scale currently. A wire manufacturing company prepares in advance a series of factors, one for each item of variable expense group from which, by computation, the respective items as budgeted can at any time quickly be adjusted to a level more comparable with production volume than is the result obtained when a single percentage is used for all variable items.

A similar method is the use of percentage rates of variability, namely, estimate in advance the percentage of variability of each expense item to production volume. These rates are listed in conjunction with the respective items and used as coefficients with percentage fluctuations in production. e.g. If expense item normal was 500 dols. with an estimated variable rate of 30 per cent and if normal labour hours for the week in a certain department were 3,000 then if the hours actually worked were 3,600, production increase would be 20 per cent, which, applied on the 30 per cent variability rate, would give

6 per cent increase, or 30 dols. for that particular item, thereby making 530 dols. the total burden. For quick computation, comparison and control, an average variable rate is sometimes used for each group of budgeted items, and another average rate for total manufacturing expense.

Some companies that use the single percentage method of adjustment, compute estimates, budgets at different percentages, volumes of activity from, say, 30 per cent to 100 per cent or even to 110 per cent. Some start at whatever percentage is necessary to maintain a minimum organisation and provide the necessary facilities to carry on a going business. The percentages are stepped up to intervals of 5 per cent or 10 per cent. Sometimes charts are prepared on which curves are plotted for these points, to be used in determining a fair allowance, called curved allowance, for any intermediate point. All of these methods are good in proportion as they conduce to accuracy in measuring the estimated with the actual. The estimates as adjusted to the different levels of production may be furnished to each foreman. At the end of each week the accounting office should render to each foreman a report showing the men in parallel columns and by kinds of expenses a comparison of—

1. The budgeted amounts as adjusted to the capacity actually worked in his department.
2. Actual expenses.
3. Amount of variance.
4. Percentage of realisation, or amount allowed divided by actual.

At the end of each month a summary report of operations by departments should be prepared of the entire plant for review by the officers.''

Distinction between Fixed and Variable Budgeting.

Nothing in the foregoing paragraph nor anything which appears subsequently should be inferred as meaning that a fixed budget has practically no value. Nothing could be further from the truth. Practically every concern begins with a fixed budget and some develop later into variable budgeting. It is safe to say, however, that budgetary control would have achieved only a fraction of its popularity if it had not been for the comparative simplicity of fixed budget installation. It should also be remembered that it is not every concern which has either the organisation or the statistical data necessary for a commencement of variable budgeting. It is true that the fixed budget is under the great handicap of having its control value largely proportionate to the accuracy in estimates. Nevertheless, as an incentive and also as a stepping-off point for the gradual conversion to variable budgeting, the fixed budget is a most

valuable management device. This aspect of the matter can be summed up in a practical way by suggesting that each concern which has no complete costing system should prepare a fixed budget for its operations, gradually extending control by allowing for variable elements until finally, complete variable budgeting is in operation.

FIGURE No. 65.

DEPARTMENTAL MULTIPLE BUDGET.

Department "D."

	Symbol No.	50%	60%	70%	80%	90%	100%	110%
Foreman	A14	75	75	75	75	75	75	75
Assistant Foreman	A15				30	30	30	30
General Wages ..	A16	280	280	300	315	330	340	350
Inspectors	A17	40	40	40	40	40	40	75
Clerks	A18	50	50	50	50	50	50	50
Repairs	A19	60	60	80	80	100	100	120
Material Handling	A20	120	135	150	165	180	200	215
Supplies	A21	55	65	75	90	105	120	135
		680	705	770	845	910	955	1050

Method Adopted.

The first advance towards controlling expenses in relation to turnover took the form of the preparation of what were actually a number of budgets, calculated on varying turnovers. Generally three budgets were prepared; the first based on the turnover which was considered most likely to be realised; the second based on the lowest turnover anticipated by the company; and the third based on the absolute maximum turnover possible. Sometimes these three budgets were used to control the expenses, and, where the sales turnover did not coincide with any one of the three figures, the expenses actually incurred were adjudged reasonable or otherwise according to the information given by the figures already prepared.

This was a step in the right direction, but left much to be desired. The difference between the expected turnover and either the maximum or the minimum allowed too much latitude in the matter of expenses incurred. It was still difficult to *control* expenses in the way desired. Under certain circumstances a business could still show an unfavourable result, which

would not be disclosed because there would not be any basis of comparison between actual performance and any of the budget figures.

To reduce the possibility of discrepancies the number of budgets was sometimes increased. Where £80,000 represented the turnover which would probably be realised, and £100,000 and £60,000 represented the maximum and minimum turnovers respectively, budgets were not only prepared for these programmes, but were also set up for, say, £70,000 and £90,000 as well. This would mean that there would be five budgets in all. Thus, though it was thought that the figure of £80,000 would be reached, the necessary figures for a margin of £20,000 more or less were available. If £75,000 was the actual figure attained, it was a comparatively simple matter to arrive at the control figures for this amount by an examination of the £70,000 and £80,000 schedules. If the actual sales amounted to £72,000, the expenses should be little more than those planned for the £70,000 schedule. If they approximated those set down for £80,000, then it would be known that they would be too high, and attention would be directed towards promoting economies of some kind to bring the future results into line. The idea behind the preparation of such schedules was simply to promote comparisons between the actual and the planned. In other words, the questions of comparison and control were recognised as being of increasing importance. This type of budget is known as the Multiple Budget, and an example is shown in Figure No. 65.

Preparation of the Multiple Budget.

In the case of a company whose sales during the previous term for example totalled £215,000, it may be anticipated that owing to general business recovery, record sales of £250,000 should result. It may also be considered that if the general recovery is accelerated it is possible that the business may reach £275,000. On the other hand, if there is anything in the nature of a set-back early in the budgetary period, the gain might be only a normal one, resulting in a turnover of £225,000. The company finding itself in this position could prepare a multiple budget covering the three turnovers. This would, of course, entail the calculation of production and other expenses as they would result at turnovers of £225,000, £250,000 and £275,000.

These calculations would usually be made in the following manner—

1. The expenses would be estimated in relation to the three turnovers, irrespective of the proportions of fixed and variable expenses. In other words, a fixed budget would probably be

prepared to cover a turnover of £250,000. An analysis designed to show what reduction in expenses could be expected in the event of sales reaching only £225,000 would then be made. Furthermore, the extra expense incurred in obtaining a turnover figure of £275,000 would also be calculated. Actually, in order to calculate these figures some notice might be taken of the fixed and variable expense proportions of the total amount of each expense, but it would not be done in any systematic or scientific way such as is described in the second alternative. This is the common method of setting up a multiple budget, and can be regarded as the logical advance from the fixed budget stage. Most concerns preparing this form of budget would probably have had a fixed budget over a number of periods, and, impressed with the necessity for greater accuracy and greater control, would decide to limit the margin of error possible from a difference in actual turnover compared with that estimated in the fixed budget.

In illustration of this method the following practical example of estimating labour costs for a particular department can be given. By a conference with the superintendent it may be learned that for every change of 15 per cent in the activities of the department an inspector must be taken on or can be dropped. Alternatively, it may be agreed that when departmental production reaches a certain level the foreman may be permitted an assistant, but below that level he must handle the work alone. A similar investigation can be made in relation to all the labour costs of the department. From the information thus gained the various percentage factors can be computed. When these have been worked out, the list may appear somewhat like this—

FIGURE No. 66.

MULTIPLE DEPARTMENTAL EXPENSE BUDGET.

Labour Costs.

	Dept. 1	Dept. 2	Dept. 3
For 30% and Over Increase	·375	·540	·242
" 25% to 30% "	·380	·542	·243
" 20% to 25% "	·395	·545	·242
" 15% to 20% "	·405	·550	·240
" 10% to 15% "	·415	·555	·240
" 5% to 10% "	·405	·559	·245
" 0% to 5% "	·400	·550	·250
" 0% to 5% Decrease	·400	·550	·250
" 5% to 10% "	·380	·535	·242
" 10% to 15% "	·370	·525	·234
" 15% to 20% "	·362	·520	·227
" 20% to 25% "	·355	·517	·222
" 25% to 30% "	·350	·515	·218
" 30% and Over "	·345	·513	·215

This means that if the volume for Dept. 1 as measured by production labour used is below normal by between 15 per cent and 20 per cent, the actual percentage deficiency multiplied by the factor ·362 will give the proper deduction from the normal budget. For example, if expenses in Dept. 1 for normal production are fixed in the normal budget at £4,000 per month, 82 per cent of this normal activity would call for a deduction of ·362 times 18 per cent, multiplied by £4,000. Thus, the corrected budget would stand at £3,739.

2. The expenses for the three turnovers could be prepared by means of a thorough examination of the proportion of fixed and variable expense in relation to each one, and the amount would be applicable to each turnover concerned. Where an expense was partly fixed and partly variable, the proportions would be taken into account. The method of arriving at proportions of fixed and variable expenses is shown in the next chapter.

Where it is desired to arrive at departmental estimates for a number of turnovers the following programme could be adopted—

1. Decide upon the unit of output for a department for example, yards, pounds, pieces processed or direct hours worked.
2. Calculate the number of units of output resulting from 100 per cent departmental capacity.
3. Determine present rate of capacity.
4. Set down all current expenditures being incurred at present rate of capacity, eliminating unusual expenditure and making maximum reductions possible in all other expenses.
5. Step up and down the various expenses for each 5 per cent increase and decrease respectively in productive capacity, reviewing each item for possible reductions.
6. Furnish copy of expenses to departmental executive.

The head of the department should have some part in making these estimates. Indeed it would frequently be most difficult to prepare them without him.

From the results obtained from such procedures as the foregoing, it was soon found that it was possible to arrive at a percentage of variability where expenses in relation to the turnovers covered by the multiple budget had been divided into variable and fixed expenses. With this information available it became apparent that it would be possible to prepare

budgets covering any turnover of reasonable amount, with very little extra cost or work. No matter what sales were actually obtained, the expenses allowable to net a certain amount of profit could be readily ascertained. If the expenses exceeded the amount shown as being allowable, economies would be necessary. This control became a vital factor, able to be exercised with a reasonable degree of certainty no matter what turnover was obtained. The further development of variability is explained in the following chapter.

CHAPTER IX

PROFIT CONTROL

Types of costs—methods of ascertaining variability—break-even point—ascertaining the amount of profit—profit control charts—calculation of turnover required—the new approach to profits—estimating results of price reductions.

Types of Costs.

In order to understand the principles and methods of preparation of purely variable budgets, it is necessary to examine the various types of expenses which go to make up total costs. In any business there are certain expenses which vary directly in proportion to production and selling, and others which vary according to these without there being any fixed relationship. In addition there are other costs which are incurred whether there is any activity or not. These various types of cost have been named—

1. *Fixed Costs.*

These represent that portion of the total cost which exists irrespective of the volume of the business done and without any regard to fluctuations.

Fixed Costs have been divided into three kinds—

- i. Costs which exist even if the business was closed down entirely—such as rates, taxes and insurance.
- ii. Costs which are incurred in maintaining a minimum organisation as a going concern—such as telephone rental, cleaning, heating and lighting.
- iii. Costs which in the ordinary course of running the business are treated as fixed either from the point of view of usual practice or of policy—such as managerial charges, clerical salaries etc.

2. *Variable Costs.*

These include all items which ordinarily vary directly or indirectly with the amount of production or sales and bear some relation to such.

Variable costs can be further divided into True Variable and Partly Variable. The True Variable Cost is one which fluctuates directly in accordance with the production (or in the case of selling expenses, with turnover) and the Partly Variable, whilst increasing with production or sales increases, does not do so in any fixed ratio. It is also necessary to take into account those costs, part of which are fixed, whilst the other part varies. These are sometimes known as Fixed-Variable Costs. In the case of telephone charges, for example, the rental portion is a fixed charge, and would be incurred even though no production or sales took place, unless all services were disconnected. The expense representing call charges would be partly variable cost, as it would not increase in direct ratio to any production or sales increase.

The best examples of variable costs are the direct items of materials and production labour, which vary directly with the amount of production, and bear practically a constant relationship to it. Manufacturing supplies can be regarded as being almost of the same type. At the other end of the scale there are such fixed expenses as executive salaries and rent, which do not vary with volume. It is between these two groups that most expenses will be found. They are generally those which vary with volume, but not in any direct ratio. They can be reduced in amount when production volume is decreased, but they cannot be altogether eliminated. For example, foremen's wages may be reduced where volume becomes less, (e.g. from £10 per week when the factory is extremely busy to £8 per week when things are slack) but it is highly improbable that this expense will fall to the same degree as production. Fixed Variable (or Semi-Variable) Costs really contain a fixed element and a variable element, but here again the latter seldom bears any fixed relation to turnover. The example given above in relation to telephone expenses shows that the fixed portion of this semi-variable item was represented by rental and the variable by call charges. To the extent, therefore, to which semi-variable expenses change with the volume of business, they are variable; to the extent to which they do not change, they are non-variable. In order to ascertain the part played by volume in results to be achieved it is necessary to determine as closely as possible the nature of each type of expense and the classification which can be applied to it.

While production expenses have in the main been mentioned, it must be realised that the selling expenses can also be divided into similar classifications. The salary of the Sales Manager would be a fixed expense, salesmen's travelling expenses would be partly variable and salesmen's commission (if

calculated purely upon sales made) would be true variable. If salesmen were given a retainer and a commission on sales, their total remuneration would be classed as fixed-variable, the retainer being the fixed portion and the commission being variable. All of these expenses would, of course, be considered in relation to sales volume.

A clearer conception of the division of expenses may be gained from the following classification, which, however, must be treated as being of general interpretation only, as a fixed expense in one business may be variable in another—

Manufacturing Expense.	
Administrative Salaries	Fixed
General Payroll	Portion Fixed, portion Variable, portion Partly-Variable.
Production Office Salaries	Fixed
Cost Office Salaries	Fixed
Purchase Dept. Salaries	Fixed
Fuel	Fixed Variable
Power and Light	Fixed Variable
Repairs and Maintenance	Fixed Variable
Insurance	Fixed Variable
Office Supplies	Fixed Variable
Telephone and Telegraph	Fixed Variable
Factory Travelling	Fixed Variable
Freight Inwards	Variable
Materials	Variable
Depreciation—Buildings	Fixed
Rates and Taxes	Fixed
Depreciation — Machinery and Equipment	Fixed Variable
Selling and Administrative Expense.	
Administrative Salaries	Fixed
Salesmen's Salaries	Fixed Variable
Salesmen's Expenses	Fixed Variable
Accounts Salaries	Fixed Variable
Printing and Stationery	Fixed Variable
Postages and Telegrams	Fixed Variable
Telephone	Fixed Variable
Donations	Fixed
Audit Fees	Fixed
Delivery Expenses	Fixed Variable
Bank Charges	Variable

Methods of Ascertaining Variability.

Taking the two broad divisions of Fixed and Variable Costs, it will be understood that the sales price of an item is made up of Fixed Cost, plus Variable Cost, plus Profit (or minus Loss). Expressing this in a different way, it can be

stated that the difference between Variable Cost and Sales Value represents the contribution to Fixed Cost and Profit. Thus, an item which is sold for £1 and has a variable cost of 12/-, shows an amount of 8/- for fixed cost and profit. If it is known that the fixed cost is 5/-, the profit must be the remaining 3/-. This procedure can be extended to cover the statistics relating to the whole business, but it is first essential to calculate the percentage of variable cost. One of the methods by which this can be done is to divide the difference between maximum sales and the minimum sales into the difference between the cost of maximum sales and the cost of minimum sales. If it was estimated that the greatest amount of business possible would be £100,000, while the absolute minimum would be £50,000, and that the former would cost £65,000 and the latter £40,000, then the percentage of variable cost would be £50,000 divided into £25,000. This would equal 50 per cent Variable Cost.

Maximum Turnover ..	£100,000	Cost of Maximum Turnover	£65,000
Minimum Turnover ..	£50,000	Cost of Minimum Turnover	£40,000
Difference	£50,000	Divided into	£25,000

Therefore Variability is 50%.

The principle involved is simply that in the subtraction of one cost from another the fixed expense which is common to both amounts is eliminated. It has been termed the "Degree of Variability" formula.

This procedure can be followed in relation to every class of cost. In the illustration given before of telephone expense, it may be found that the fixed cost would amount to £10 per year and the variable cost would work out at ·0125 per cent. If the turnover was £100, on this basis the telephone expense should amount to fixed cost £10, plus 100 times ·0125, equalling £1/5/-, and totalling in all £11/5/-. If the turnover was £1,000, it should equal £10, plus £12/10/-, equalling £22/10/-.

This method, of course, assumes that the variable portion of the expense always increases in the same proportion as sales or production volume. This may not always be the case, but with good reason the method ignores any differences caused on this account, as general discrepancies are small. Actually telephone expense would generally be represented by a normal curve whilst a straight line would represent the results under this method of calculation.

Later, other methods of arriving more accurately at the proportions of fixed and variable costs under various sales or production volumes will be considered, but for the present this method supplies an easy and reasonably satisfactory method of approach to the study of Profit Control.

Break-even Point.

It is possible to extend this principle to ascertain the amount of turnover required to cover the total amount of expense, or to make a certain pre-arranged profit. The amount of turnover necessary in order that there shall be neither profit nor loss is termed the "Break-even Point." Where a business has a turnover of £250,000 per year, its fixed cost representing £50,000, and its variable cost percentage equalling 70 per cent, the profit should amount to £25,000. This is arrived at in the following manner—

Total Sales		£250,000
Less Fixed Cost	50,000	
Less Variable Cost (70% of £250,000)	175,000	225,000
Profit		£25,000

To find the break-even point it is necessary to multiply the amount of the fixed cost charges by 100, dividing by the percentage which the fixed charges represent to the whole. Thus, in the case given above, the fixed charges £50,000 should be multiplied by 100 and divided by 30, because variable cost is 70 per cent. The break-even point is therefore the quotient £166,666/13/4. This answer can be proved as under—

Fixed Costs	£50,000
Variable Cost (70% of £166,666/13/4) ..	115,666/13/4
Total of Sales	£166,666/13/4

No clearer view of the effect upon a business of the ratio existing between fixed and variable costs can be obtained than through the illustration of various examples. In the case already given, if the fixed cost could be reduced to £40,000, the break-even point would be £40,000, multiplied by 100, divided by 30, equalling £133,333/13/4.

If the fixed cost remained at £50,000, but the variable cost was reduced to 60 per cent, the break-even point would be £50,000, multiplied by 100, divided by 40, equalling £125,000, as in this case fixed costs would represent 40 per cent.

Ascertaining the Amount of Profit.

The same formula can be applied to ascertain the profit or loss likely to be made on any volume of turnover. Returning to our original example of a fixed cost of £50,000, and a

variable cost of 70 per cent, we are able to tell what profit or loss there would be in the case of a turnover of, say, £300,000.

Fixed Cost	£50,000
Variable Cost (70% of £300,000)	210,000
	£260,000
	Profit Equals £40,000

The effect which percentages of fixed and variable costs have upon profits at varying turnovers is best shown as under. Four businesses are each making £3,000 profit. The particulars in relation to each business are—

Percentage contributed to Fixed Cost and Profit—
Business No. 1 20%
" " 2 30%
" " 3 40%
" " 4 50%

	No. 1	No. 2	No. 3	No. 4
Variable Cost	24,000	21,000	18,000	15,000
Fixed Cost	3,000	6,000	9,000	12,000
Profit	3,000	3,000	3,000	3,000
Sales	30,000	30,000	30,000	30,000

Though each business has made £3,000 on a turnover of £30,000, the difference in the ratios of fixed and variable costs means that there is a different break-even point in each case. Thus—

BREAK-EVEN POINT.

	No. 1	No. 2	No. 3	No. 4
Variable Cost ..	12,000	14,000	13,500	12,000
Fixed Cost	3,000	6,000	9,000	12,000
Profit	Nil	Nil	Nil	Nil
Turnover	15,000	20,000	22,500	24,000

The above illustration shows that because in No. 1 business the fixed cost is only 20 per cent, the amount of sales necessary to break even is only £15,000. In the case of No. 4, the fixed cost reaches 50 per cent, and it is necessary to obtain £24,000 worth of sales in order that all costs may be recovered. It is

now possible to gauge the effect of decreased or increased turnover in each of the above cases. If turnover falls to £25,000, the following position would be disclosed—

	No. 1	No. 2	No. 3	No. 4
Variable Cost	20,000	17,500	15,000	12,500
Fixed Cost	3,000	6,000	9,000	12,000
Profit	2,000	1,500	1,000	500
Turnover	25,000	25,000	25,000	25,000
In the event of a £15,000 turnover the position would be—				
Variable Cost	12,000	10,500	9,000	7,500
Fixed Cost	3,000	6,000	9,000	12,000
Loss	Nil	1,500	3,000	4,500
Turnover	15,000	15,000	15,000	15,000
If, however, there was an increase in turnover to £40,000 the position would be—				
Variable Cost	32,000	28,000	24,000	20,000
Fixed Cost	3,000	6,000	9,000	12,000
Profit	5,000	6,000	7,000	8,000
Turnover	40,000	40,000	40.000	40,000

As a rule to be followed, therefore, it can be stated that the best business is that with the lowest variable cost consistent with a break-even point below the smallest volume of business which there is a reasonable probability of obtaining.

From the foregoing the following conclusions can be drawn—

1. That the effect of increased turnover on profits is determined by the amount of fixed costs and the percentage of variable costs.
2. That better prices would frequently give more satisfactory results than increased turnover.
3. To increase profits it is necessary firstly to attempt a reduction of fixed costs and secondly a reduction of the percentage rate of variable expense.

Profit Control Charts.

The matters outlined in this chapter can be reduced to diagrammatic form.

In Figure No. 67 the line A.C. represents sales capacity, the line A.B. is the sales line and B.C. is the amount indicator. The line E.F. represents fixed costs and it will be noted that

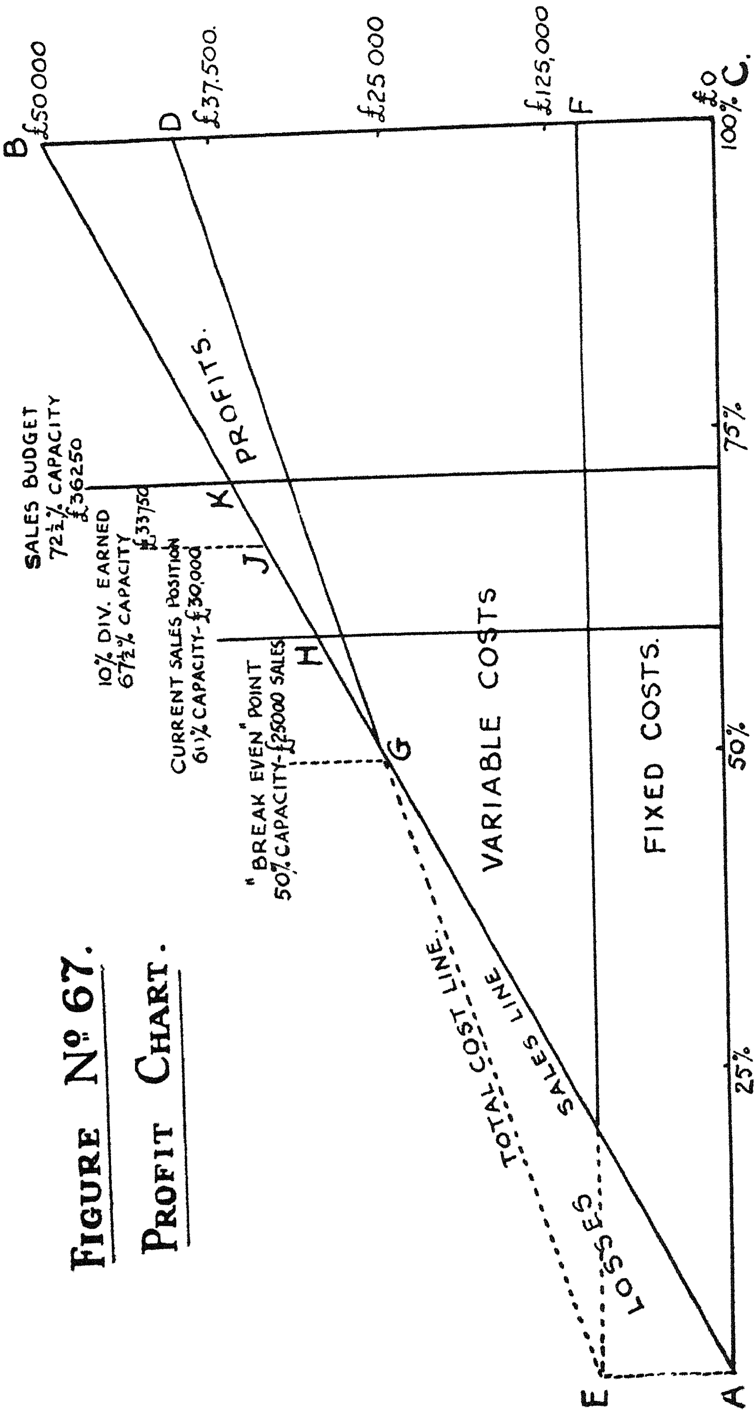


Figure No. 67.

Profit Chart.

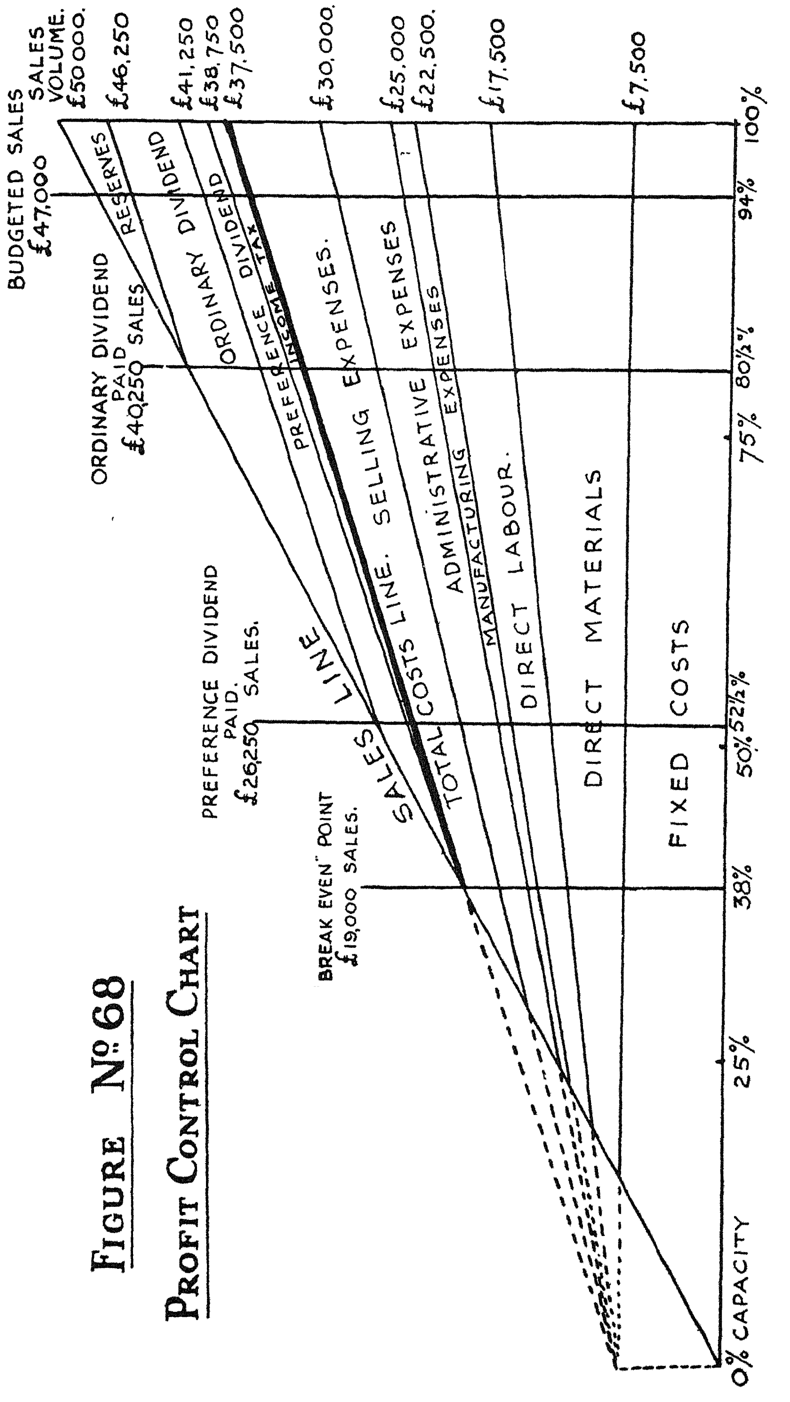


FIGURE No. 68

PROFIT CONTROL CHART

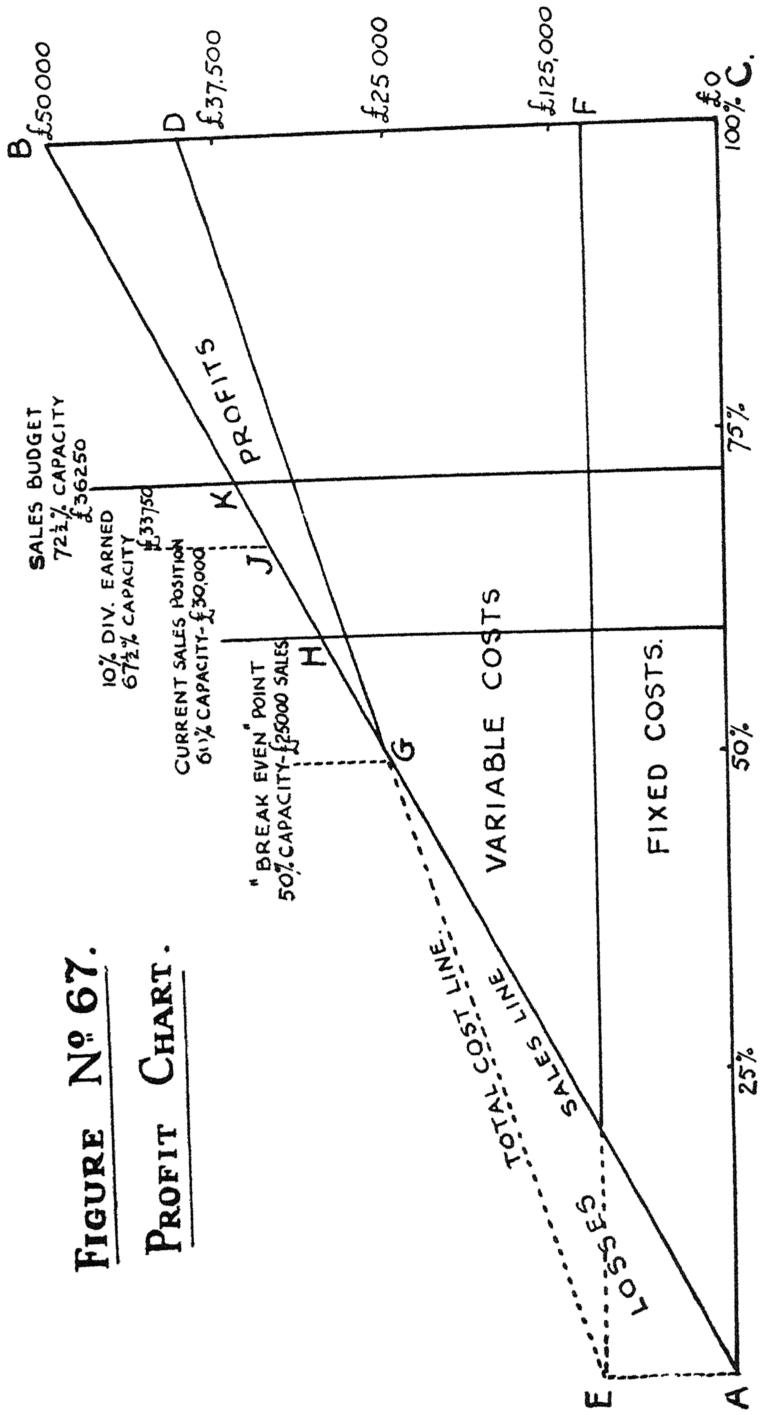


Figure No. 67.

Profit Chart.

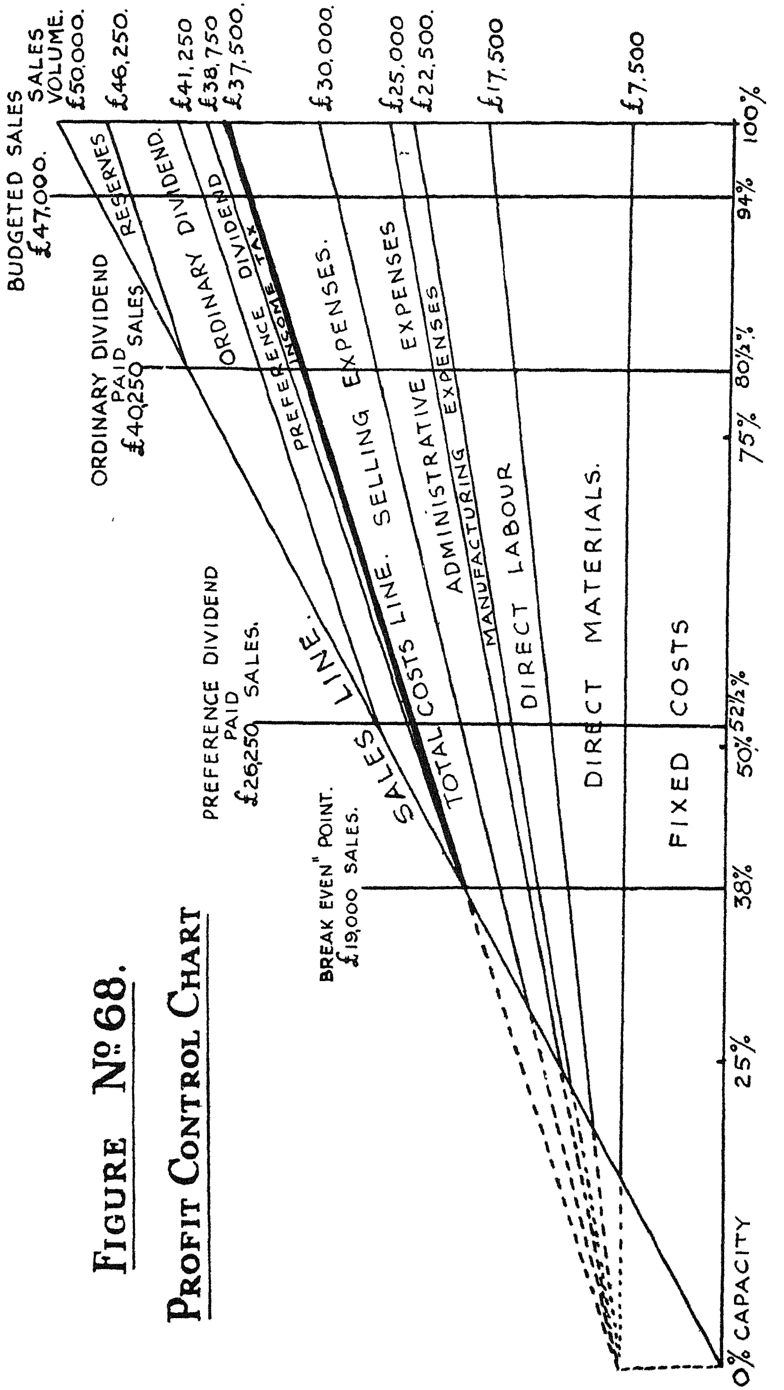


FIGURE No. 68.

PROFIT CONTROL CHART

the variable cost line E.D. commences from the fixed cost line. In this figure 100 per cent sales capacity would mean a sales volume of £50,000. Fixed costs amount to approximately £9,000 and variable costs increase at such a rate as would enable the business to break even at 48 per cent capacity which would give sales amounting to £24,000. This is indicated by the point G. It will be noted that the current sales position shows 64 per cent capacity totalling £32,000 sales (H.). In order to earn 6 per cent on capital it would be necessary to increase sales to £36,000 which would represent 72 per cent of capacity. In this instance the budget has been fixed at 76 per cent capacity which means that the sales budget shows a total of £38,000 (K.).

Graphs of this kind can be used to illustrate the effect of varying the proportions of fixed and variable expenses. For example, there may be a low profit potential due to high variable and fixed costs. Again, the variable cost line may rise more sharply and be more than offset by a lower fixed cost line. This would have the effect of bringing the break-even point to a much lower sales capacity.

Figure No. 68 shows a profit control chart. It is thought that after the previous illustrations it should not be difficult to understand what this is intended to convey. In dissecting the various costs, the first line is the fixed cost line, which is shown throughout as £7,500. The next represents direct materials, which, of course, is a variable, as indeed are the remainder of the expenses. These are Direct Labour, Manufacturing Expense, Administrative Expense and Selling Expense. It should be remembered that some proportion of each of these items will be included amongst the fixed costs. The total of these various amounts is shown by the total costs line, the actual figure being £38,750 at 100 per cent capacity (including allowance for Income Tax). The break-even point is at 38 per cent and actually sales amounting to £19,000 must be secured at the ratios of cost shown in the figure in order to cover all expenses. From this point profit begins in the business, and the first appropriation is for Income Tax, which is a variable expense. The next charge would be Preference Dividends which would generally be fixed. Finally there would be a variable element, Ordinary Dividends, because in all probability they would be increased as profit became larger. Finally the balance of profit represented in the chart by the small triangle at the top of the chart would be the appropriation to reserve. An analysis of the chart shows that it takes 52½% of sales capacity in order to cover preference dividends as well. The ordinary dividend can be paid only by achieving a 80½ per cent sales capacity.

It will be easy to see how valuable a chart of this kind can become, as once the amount of fixed cost and variable expenses is known, it is possible to arrive at the sales turnover required to cover any or all of the expenses plus any required profit. Its uses can be set down as under—

1. To compare sales, costs and profits for any turnover.
2. To determine the amount of sales necessary in order to break even, to pay preference dividends, to pay ordinary dividends or to procure any specific amount of profit.
3. To compare probable earnings of different businesses.
4. To arrive at the total increase in sales necessary to justify extra capital expenditure for, say, plant extension.
5. To determine the amount of increase in sales necessary to balance a specific reduction in selling prices.
6. To estimate the effect upon profits of changes in wages cost, materials cost or some other such factor.
7. To determine whether a large order at a cut price would be worth while.
8. To determine probable unit costs at varying levels of production.

Consideration can now be given to the method of ascertaining the turnover necessary to reach a pre-arranged amount of profit. The degree of success attained by management generally depends upon the amount of net profit earned and particularly its relationship to capital employed. This rate of return should be adequate and should take into consideration, not only the nature of the industry, but the risk it entails as an investment. The more hazardous the investment risk, the greater should be the profit return. Therefore, a mining company should pay greater dividends than an insurance company. It is, however, impossible to lay down any arbitrary amount as being the fair profit return which could be reasonably expected. In some investments 3 per cent might be satisfactory, whilst in others 20 per cent may be looked upon as low.

Calculation of Turnover Required.

With a knowledge of the desired profit, it is possible to work back to ascertain the amount of turnover necessary in order to produce such profit. A company with a capital of £500,000 desires to pay an 8 per cent dividend, to be able to set aside £10,000 for taxation reserve and £20,000 for general

reserve. The total amount of profit necessary is therefore £70,000. It is known that the fixed charges amount to £100,000 and variable cost percentage is 80 per cent. This would mean, therefore, that the total profit, plus fixed charges (£70,000 plus £100,000, equals £170,000) equals 20 per cent. The turnover (100 per cent) would therefore be £850,000. The position would actually be—

Fixed Cost	£100,000	
Variable Cost	680,000	(80%)
Profit	70,000	
Turnover	£850,000	

In dealing with the preparation of the Sales Budget (Chapter II) mention was made that one of the methods employed in fixing upon the turnover to be budgeted for was known as "From the Top Down." Where this idea is proceeded with it is generally found that the amount of sales is fixed by the executive, and he would keep current conditions and reasonable prospects in mind. For example, with the amount of profit just given, the executive may insist that, though the sales for the previous year were £780,000, it is necessary that they be increased to £850,000, and the sales manager is asked to proceed with this idea in mind and to report to the executive in due course his proposals in order that this figure may be realised. It must be noted that if the sales manager adopted the attitude that it was quite impossible to obtain the increased amount no matter what steps were taken, it may still be within the powers of the management to obtain the required profit of £70,000 on a turnover equalling the previous year's figure of £780,000, by a reduction in the variable cost percentage rate from 80 per cent to, say, 71·76 per cent. Such a proposition would, of course, not be an easy one, but may represent the lesser of two evils, rather than trying to increase turnover. If the variable rate was reduced in this way, the position would be—

Fixed Cost	£100,000	
Variable Cost	610,000	(71·76% of **£850,000**)
Profit	70,000	
Turnover	£780,000	

The New Approach to Profits.

The principle contained in this method of planning is a comparatively new one. Once the sales figure has been arrived at, a deduction is immediately made to cover the amount of profit required. The balance is then available for the costs which will be incurred in processing and selling the amount of

FIGURE No. 69.

ADDITIONAL PERCENTAGE OF TURNOVER REQUIRED TO OFFSET PRICE REDUCTIONS.

(*Extra Expenses are Ignored.*)

Original Percentage of Profit.	Proposed Percentage of Profit													
	70%	65%	60%	55%	50%	45%	40%	35%	30%	25%	20%	15%	10%	5%
25%											25	66·7	150	400
30%										20	50	100	200	500
35%									16·7	40	75	133·3	250	600
40%								14·3	33·3	60	100	166·7	300	700
45%							12·5	28·6	50	80	125	200	350	800
50%						11·1	25	42·9	66·7	100	150	233·3	400	900
55%					10	22·2	37·5	57·1	83·3	120	175	266·7	450	1000
60%				9·1	20	33·3	50	71·4	100	140	200	300	500	1100
65%			8·3	18·2	30	44·4	62·5	85·7	116·7	160	225	333·3	550	1200
70%		7·7	16·7	27·3	40	55·6	75	100	133·3	180	250	366·7	600	1300
75%	7·1	15·4	25	36·4	50	66·7	87·5	114·3	150	200	275	400	650	1400

goods represented in the turnover figure. The difference between these two approaches can be set down as under—

The Older Method—

Sales Turnover, less Costs, equals Profits.

The Newer Method—

Sales Turnover, less desired Profits, equals Costs.

The second method is one in which the necessity for profits is placed in true perspective and proceeds from the viewpoint that the first deduction from sales income should be the profit which the business can reasonably expect and desire, and that the business itself must in some way learn to live within the balance of the income that is available. On the face of it this seems to be something of an idealistic proposal and one which could not be realised in many instances. It must be borne in mind, however, that if careful attention is devoted to analyses and preparation of figures, and providing the profit is a reasonable one and corresponds with the amount which could ordinarily be taken as representing a fair margin, the business itself should be able, at least in ordinary times, to control its costs so that they do not exceed the balance available for this purpose. When the costs have been examined, and the various individual items have been allocated, so that in total they are within the required amount, the next step is the control of operations so that the actual costs do not exceed these budgeted figures.

Estimating Results of Price Reductions.

It is sometimes necessary to ascertain the effect of a 5 per cent reduction of price in a commodity where it is expected that such reduction will mean an increase in sales. For example, if sales, at present £80,000, could be increased by £20,000 if prices were reduced by 5 per cent, would this be worth while, assuming a variable expense rate of 70 per cent? The remaining 30 per cent would be the contribution to fixed cost and profit. By reducing the price 5 per cent, a loss of £4,000 on present sales would take place, but a profit of 25 per cent of £20,000, would be secured. Therefore, the net gain in profit would be £1,000, by making the reduction. It is frequently not realised what a difference to profits a reduction or an increase in sales price can make. Where a business is obtaining a profit percentage of 35 per cent and it decides to reduce the price so that only 25 per cent is obtained, the percentage increase in turnover necessary to keep the amount of profit the same would be 40 per cent. (See Figure No. 69.)

This is typical of the method to be adopted in obtaining the various information which profit charts can give. It is now possible to examine the Flexible Budget.

CHAPTER X

FLEXIBLE BUDGETS

Definition—confusion in terminology—six methods of preparation —the first method—the second method—the third method—the fourth method—the fifth method—the sixth method—conclusion.

Definition.

A Flexible Budget has been described as—

"One so constructed as to provide a ready means of computing exact budget figures for any particular volume of business and establishing the means of direct comparison of actual operating results with definite standards." (J. R. McKenzie in "The Australian Accountant," October 1936.)

Commenting upon the necessity for the Flexible Budget, the explanation was added—

"However much time and thought is given to the preparation of a budget in the hope that the activities, the expenses and the final profit as stated in the budget will be exactly as realised without any change, such a hope, in practically every case, is certain to be unrealised. When a budget is fixed at the beginning of an operating period, and is allowed to stand without adjustment for volume fluctuation, it loses its value as an operating tool for the department heads who are responsible for controlling the various phases of the business. As conditions change and the budget figures remain fixed, interest in striving to achieve budget gradually dies. Budget figures are either impossible to meet or they are too easy. To be effective a budget must carry within itself the means for making adjustments and changes, so as to be on a comparable basis to changed conditions as they arise. . . . It is a phase of budgeting which is of especial importance in periods of fluctuating or abnormal conditions, but it is also necessary in times to be considered normal."

Confusion in Terminology.

There is some confusion in thought or possibly more in terminology in relation to the expressions "Variable Budget"

and "Flexible Budget." Possibly owing to the newness of the subject there has been no attempt to crystallise thought to the extent of formulating definitions which would remove any possible ambiguity in relation to these matters. Some speakers and writers have in the past referred to either a Flexible Budget or a Variable Budget when they actually had in mind what has been described in these pages as a Multiple Budget. Similarly, the budget herein referred to as "Flexible" is often called a "Variable Budget." Flexible seems to be the old term, the word "variable" becoming increasingly used, seemingly largely on account of the importance placed upon the amount of the variable expense in preparing this type of budget. This situation has not been clarified by a book by J. H. Williams on "The Flexible Budget." In this book the type of budget prepared, whilst being flexible in nature and corresponding largely with the ordinary flexible budget, nevertheless particularly stresses the importance of control through individual members of the organisation. Whilst there is always such an element in all budgetary control, the relationship is made almost fundamental, largely forming the main theme described. This type of budget is described in the next chapter under what appears to the writer to be a more suitable title—"the Functional Budget." In this book, the term "variable budgeting" is used to cover all methods of budgeting other than the Fixed Budget. Of such methods, three are described herein—the Multiple Budget, the Flexible Budget and the Functional Budget.

Methods of Preparation.

The aim of flexible budgeting is to show the expenses and results which should be realised in relation to actual turnover achieved. As soon as production output and sales volume for a particular month or period are known, it is possible and necessary to calculate the total expense which should have been incurred and therefore the total profit which should have been obtained. These figures are then compared with actual results and remedial action taken where necessary. Where the comparisons are made at short intervals the degree of control is immeasurably strengthened, the main reason being that a true comparison becomes possible—a comparison between actual results for a given volume and budgeted standards for the same volume.

It is now proposed to discuss various methods of preparing a Flexible Budget. The old adage that there is no royal road to learning can be extended to flexible budgeting. Actually, where a complete and satisfactory system is required, a costing installation is necessary and this latter should be sufficiently comprehensive to give the fullest information so as to enable a constant check upon discrepancies between actual and budgeted figures

to be made. It is because of this that a fixed budget is generally recommended in all cases where such a costing system is not in vogue. Nevertheless it is possible to obtain some of the benefits of flexible budgeting even where there is no costing system. The following methods of preparing the flexible budget are illustrative of what is meant. It will be found that only in the case of the sixth method is full information about costs essential. The first five methods enable preparation of a flexible budget to be made largely as the outcome of the collection of information derived from, together with some elaboration of, fixed budgeting. Only a simple knowledge of costs (instead of any complete costing system) would be necessary, and the amount of information required in this connection would be such as would generally be found even in an average small business. These methods give alternative ways of developing budgetary accuracy and the extension of control by the incorporation of flexible features and really represent alternative forms of graduating from fixed budgets to a complete flexible budgeting system. It is not contended that each of these methods has equal value, but it is thought that the individual peculiarities of certain businesses may make one method appeal more than the others, even though the same degree of accuracy may not be possible.

The First Method.

In the case of the Multiple Budget, various costs and expenses calculated in relation to a standard performance were based on a number of different unit programmes. The total costs (material, labour, manufacturing expenses) could be calculated for example in connection with manufacturing programmes of 50,000 lbs., 60,000 lbs., 70,000 lbs., 80,000 lbs., 90,000 lbs., and 100,000 lbs. These results would then be charted in such a way as to show the total manufacturing costs of the varying programmes. The individual items making up the total costs would also be shown. In the case of selling expenses the analysis should be made in relation to sales volume. Administrative expense should be treated either in relation to production volume or sales volume, or partly in relation to each. When charts have been prepared similar to Figures 70 and 71 the total costs which should be incurred in connection with any given volume of turnover, or production, would be readily available.

Whilst this method has its advantages in certain cases, there are generally two weaknesses. Firstly, where the manufacturing concern processes a large number of commodities, the peculiarities of the business may not lend themselves to the calculation of costs in terms of units of production. In such cases it may be necessary to make calculations based on the percentage of total productive or sales capacity, e.g. 50 per cent, 60 per cent,

THE MULTIPLE BUDGET.

	70,000 lbs.	50,000 lbs.	60,000 lbs.	80,000 lbs.	90,000 lbs.	100,000 lbs.
	£	£	£	£	£	£
Sales	33,045	23,604	28,324	37,766	42,486	47,210
Less Freights ..	200	144	172	229	258	287
	32,845	23,460	28,152	37,537	42,228	46,923
Less Cost of Sales	23,824	17,471	20,597	26,996	30,142	33,284
Gross Profit ..	9,021	5,989	7,555	10,541	12,086	13,639
Less Marketing and Admin. Expenses	5,256	4,962	5,159	5,407	5,583	5,766
Net Profit ..	£3,765	£1,027	£2,396	£5,134	£6,503	£7,873
			ANALYSIS OF COST OF SALES			
Stocks at beginning of Period ..	81,651	81,651	81,651	81,651	81,651	81,651
Raw Materials Purchased	10,363	7,403	8,883	11,843	13,323	14,804
Manufacturing Wages	1,647	1,505	1,555	1,690	1,720	1,745
Manufacturing Expenses	468	448	458	488	508	528
Excise	14,624	10,446	12,535	16,713	18,802	20,891
Repairs	38	38	38	50	50	50
	108,791	101,491	105,120	112,435	116,054	119,669
Less Stocks ..	84,967	84,020	84,523	85,439	85,912	86,385
Cost of Sales ..	£23,824	17,471	20,597	26,996	30,142	33,284

70 per cent, 80 per cent, 90 per cent and 100 per cent. Secondly, the amount of work involved in preparing the figures would fall little short of what would be required in order to take advantage of other more satisfactory methods of Variable Budgeting. In order to carry out the examination necessary to produce the figures for the Multiple Budget with reasonable accuracy, costs must be well known and where this is the case, other forms of budgeting would give more accurate results. Consideration must therefore be given to other methods of Variable Budget preparation wherein the actual figures of the business over past periods could be used. Frequently, where no costing systems are in operation, the individual items making up the total cost of sales for past periods may be available but nothing more. In other cases only the total cost of sales figures can be given. Furthermore, it is often necessary to be able to analyse differences in general or administrative accounts, such as Postages and Telegrams so as to ascertain how each account has fared as against the budget standard.

The Second Method.

This method of arriving at the figures necessary for the preparation of the Flexible Budget depends upon control being exercised by relating—

1. Selling, Office and Administrative costs to volume of Sales.
2. Productive costs to volume of Production.

For this purpose it is proposed to take a list of the Postage and Telegraph Expenses representing twelve one-monthly totals as set out in Figure No. 72. These figures represent the actual results realised during each month of the preceding year and it is proposed to analyse them to ascertain the Fixed and Variable Expense proportions. The vertical scale of graph paper is used for values and the horizontal scale for sales volume units. The point on the graph showing the meeting place of the amount of Postages and Telegrams, and the amount of January sales is marked, and the same procedure is carried out in relation to each month. Upon completion there are, of course, twelve dots, and these would appear from left to right according to the sales total for each month. Thus the month with the lowest sales would appear first, followed by other months in the order of lowest turnovers. These dots are then joined and a straight line bearing the closest resemblance to the line joining the actual results is drawn. This straight line is then projected downwards and it will be noticed that this would not commence at the point marking the zero of expense, because the expense is not of a completely variable nature. In this particular case the

FIGURE No. 71

GRAPH BASED ON MULTIPLE BUDGET.

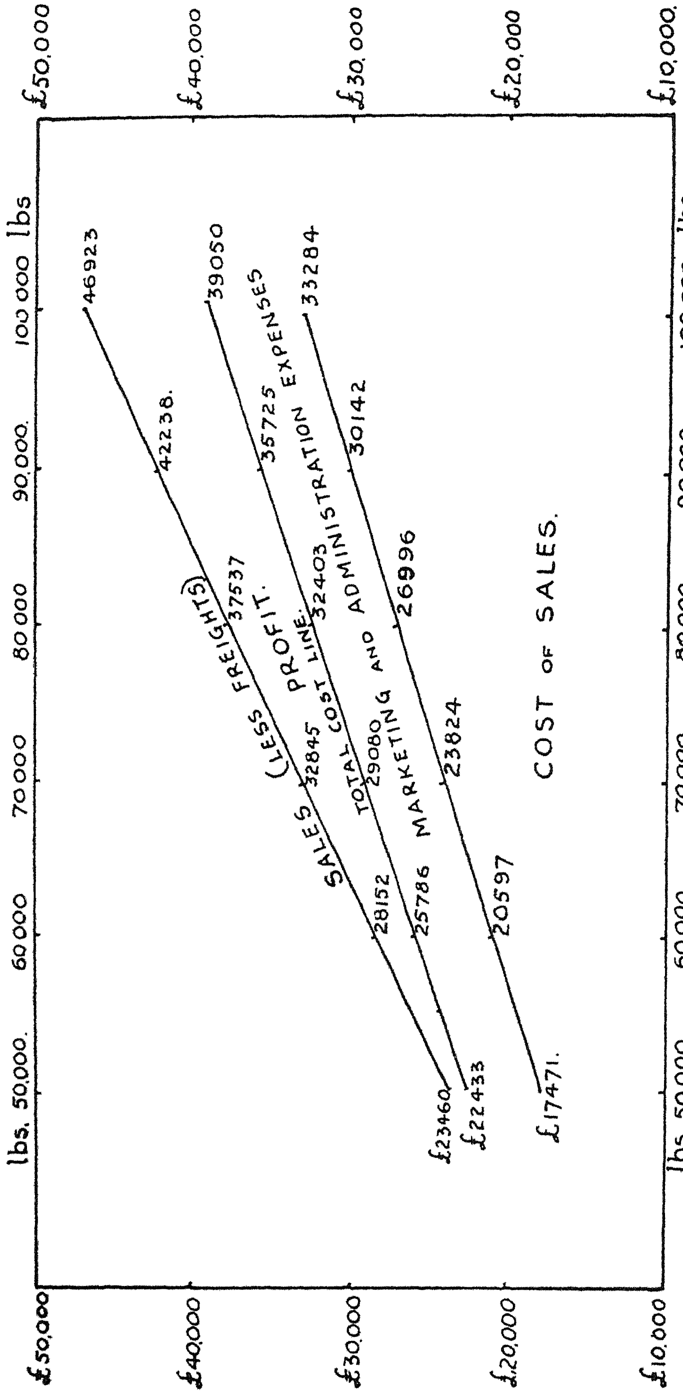
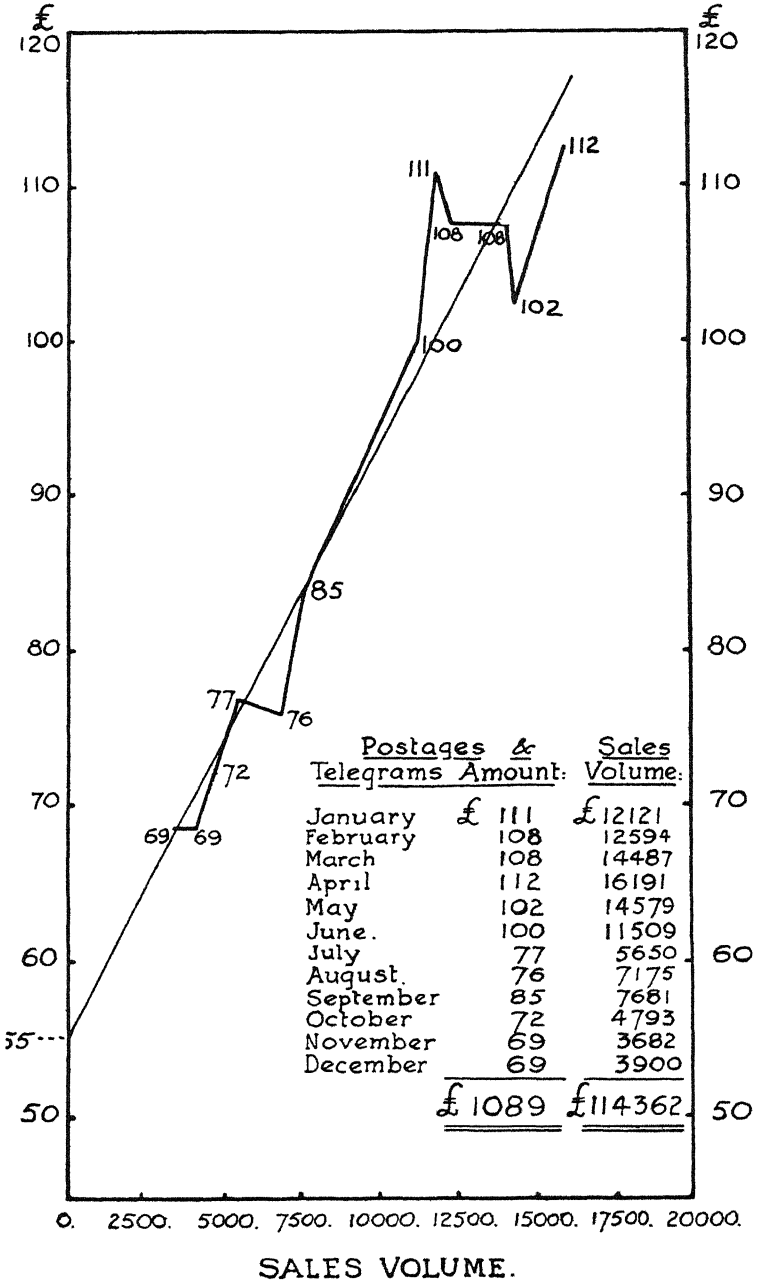


FIGURE No. 72.

FIXED AND VARIABLE COST ANALYSIS.



projection of the line means that the zero sales line crosses the expense line at 55, indicating that £55 is the fixed or non-variable element in the semi-variable item of Postages and Telegrams. At £55 per month the total annual fixed expense would be £660 and of the total sales volume of £114,362, the percentage of the variable element would be ·375125 per cent (429 divided by 114362). The total expense which would be incurred at any volume of sales can therefore be computed by adding £55 as the Fixed Cost element and ·375125 per cent of sales as the Variable Cost element. On the June turnover of £11,509 the budgeted amount allowable for Postages and Telegrams would be £98, whereas actually £100 was incurred. These figures can be traced out on the chart in Figure No. 72. The trend line straightens out abnormalities and would be used in showing the budgetary estimates. It is admitted that there may be some grounds for objection against this method as being insufficiently accurate. The margin of error likely, however, is quite small and the method is a comparatively simple one. It must be understood that the fixed costs given relate to the business whilst operating, and will not give the amount of shut down or nucleus cost previously referred to. Objection may also be raised that where one month is less than the fixed charge the value of this method would be destroyed. This does not necessarily follow because abnormalities are always being encountered in business. Of course, in the case of a totally fixed expense such as rent, no variable item would be shown. This treatment is also followed in relation to all Selling, Administrative and Office expenses and when completed each item is put down with the amount of fixed expense in one column and the percentage of variable expense in another.

The question of manufacturing costs presents greater difficulty, because it may not be as easy to find a satisfactory unit measure. To some extent the difficulty here is the same as that experienced in connection with the first method. Only in very exceptional circumstances would it be possible to relate manufacturing costs to sales volume. There would have to be a close analogy and relationship between actual production month by month and actual sales. Units of production can seldom be used because of the difficulty of work in progress, though they constitute a valuable basis wherever practicable. Each business must solve for itself the unit to be used, but generally some arbitrary gauge, such as productive labour costs, productive labour hours, machine hours, direct material costs, will give the best results. It must be pointed out, however, that care devoted to finding a suitable gauge will have a direct bearing upon the accuracy of the result portrayed. The results will be shown as

an amount covering the fixed charges, and either another amount or a percentage of the base adopted to cover the variable portion. With material, for example, there should be almost complete variability and the amount required for any particular turnover should be comparatively easy to estimate. In the case of wages, the amount paid to permanent staff would be fixed in amount, and the variable portion would be made up of the men who are kept on only while there is work to be done. The manufacturing expenses would be treated in the same manner, and, finally, the complete cost to manufacture should be obtainable.

It is quite possible, however, that certain expenses may cause difficulty because they are seemingly without any relationship between one period and another. Bad Debts may be cited as an example. Any relationship between successive amounts, and a basis for calculating purposes may be difficult to discover. In such a case the wisest plan may be to fix an amount which would be expanded to cover any volume of turnover, or to discover a relationship covering at least part of the expense, leaving certain exceptional circumstances to be responsible for the remainder. It may be found that because of an acute uncertainty of conditions in general, the bad debts figure in successive months has worked out at—

January	£123
February	426
March	Nil
April	384
May	1,022
June	73
July	568
August	449
September	122
October	282
November	953
December	427

It may still be possible and advisable to ally the bad debt position to a volume of sales outright, rather than to another standard with the idea of converting it back to a sales volume afterwards. For example, the amount of £300 could be allowed as a fixed amount, plus a percentage of sales above a fixed total. Too much stress cannot be laid upon the necessity for using every care in planning the method of attaching the various expenses to the particular base or arriving at an average, which is sometimes necessary. When all the expenses have been covered, it is possible to make out a profit and loss account for any volume of turnover.

The Third Method.

It is possible to ascertain the amount of fixed and variable expenses in any two months by relating one month to the other. Figure No. 73 sets forth figures relating to the month of September and that of October. It will be seen that sales in the latter month exceed those of the former by £5,000. Expenses were greater in October to the amount of £2,905 for cost of sales, £380 for selling expense, £380 for administrative expense and £160 for other deductions. The amount of variable expense is obtained by dividing the difference between each item of expense in the two months by the difference in sales.

FIGURE No. 73.

CALCULATION OF VARIABLE EXPENSES.

	September	October	October over September	Variation
	1	2	3	Col. 3 divided by 5000
Net Sales	£50,000	£55,000	£5,000	
Cost of Sales ..	33,690	36,595	2,905	58·1%
Selling Expense ..	7,540	7,920	380	7·6%
Administration Expense	5,900	6,280	380	7·6%
Other Deductions ..	1,680	1,840	160	3·2%
	£48,810	£52,635	3,825	76·5%
Net Profit ..	£1,190	£2,365	£1,175	

The Percentage of Variable Expense would be 76·5 per cent (3825 ÷ 5000). Therefore expenses would be as under—

	September		October
76·5% of £50,000 ..	38,250	76·5% of £55,000 ..	£42,075
Fixed Expenses (Total Less Variable) ..	10,560	Fixed Expenses (Total Less Variable) ..	10,560
Total Expenses .. (As above)	£48,810	*Total Expenses* .. (As above)	£52,635

The results obtained show that the variable expense in Cost of Sales amounts to 58·1 per cent, in Selling Expense 7·6 per cent, in Administrative Expense 7·6 per cent and in the case of

other deductions 3·2 per cent. The percentage of variable expense would be the total of the individual items, viz. 76·5 per cent. Proof that the figures in this particular instance are correct is shown by the calculations given under this table. The objection to this method lies in the difficulty of obtaining an acceptable budgetary standard. The fact that an analysis of figures for two particular months shows a certain rate allows, as a rule, no judgment to be made that the results should be used for a budget variable expense rate. It may be dangerous to take two months at random and suggest that a Flexible Budget be prepared from results shown by such, as neither month may show a satisfactory normal basis. In order to make the plan effective, therefore, it becomes necessary to adopt correct budget standards. It is sometimes possible to obtain such standards by taking a number of months and obtaining average results by an analysis of each, making allowances for improvements which can be reasonably desired and anticipated.

The Fourth Method.

This involves the use of the degree of variability formula mentioned in Chapter IX. It differs from the third method only that a maximum and minimum turnover is used and expenses are calculated in relation to such instead of relying upon two separate months, neither of which give a true picture. Figures 74 and 75 set forth the method to be adopted. It will be seen from the examples given therein that if it was desired to calculate the fixed and variable proportions in selling expense totals it would be necessary to estimate both the minimum and maximum amounts of sales that the business was at all likely to obtain. The costs necessary to secure the minimum volume would be set down as would also those to obtain the maximum amount. It may be estimated that a Sales Manager and three salesmen would be sufficient to obtain the minimum but if maximum sales were anticipated two extra salesmen would have to be allowed. The minimum expense would therefore be £170/17/6 and the maximum £243/2/6. The difference between the sales volumes would be £12,250 and the difference in expense, £72/5/0. Dividing the latter by the former the result would be 11/9½ approximately which would be the amount of variable expense in each £100. By the method outlined in the previous chapter the fixed expense would be £98/12/6. This method would be followed in relation to Travelling Expenses, Despatch Wages and Despatch Expenses. In the case of Advertising and Bad Debts, a straight out percentage on Sales

FIGURE No. 74.

CALCULATION OF CONSTANT AND VARIABLE EXPENSE TOTALS FOR PREPARATION OF A FLEXIBLE BUDGET.

SELLING EXPENSES

Salesmen's Salaries—

	£	s.	d.		£	s.	d.
Sales	£12250	0	0		£24500	0	0
Sales Manager ..	62	10	0		62	10	0
Salesman	36	2	6		36	2	6
"	36	2	6		36	2	6
"	36	2	6		36	2	6
					36	2	6
					36	2	6
	£170	17	6		£243	2	6
Maximum Sales ..	24500	0	0	Maximum Expense	243	2	6
Minimum Sales ..	12250	0	0	Minimum Expense	170	17	6
Difference ..	£12250	0	0		£72	5	0

£72 5s. divided by £12250 equals Variable Cost.

Fixed	£98	12	6	
Variable	0	11	9½	per £100

Travelling Expenses—

	£	s.	d.		£	s.	d.
Sales	£12250	0	0		£24500	0	0
As per List ..	£192	5	0		£320	8	4
Maximum Cost ..	£24500	0	0	Maximum Expense	£320	8	4
Minimum Cost ..	12250	0	0	Minimum Expense	192	5	0
Difference ..	£12250	0	0		£128	3	4

Fixed	£64	1	8	
Variable	£1	0	11	per £100

Advertising—

2½ per cent of Sales

Bad Debts—

½ per cent of Sales

Despatch Wages—

	£	s.	d.		£	s.	d.
Sales	£12250	0	0		24500	0	0
Foreman	27	10	0		27	10	0
Hands	40	0	0		60	0	0
"	37	4	6		49	12	8
	£104	14	6		£137	2	8

Fixed	£72	6	4	
Variable	0	5	3½	per £100

Despatch Expenses—

	£	s.	d.		£	s.	d.
Sales	£12250	0	0		£24500	0	0
Total Expenses ..	£73	9	10		£132	4	10

Fixed	£14	4	10	
Variable	0	9	7	per £100

FIGURE No. 74—Continued.

STATEMENT SHOWING CALCULATION OF EXPENSES.
AT BUDGETED RATES.
ON ACTUAL TURNOVER OF £11,471/10/0.

Salesmen's Salaries	Fixed £98/12/6, plus 11471½ x 11/9½ per 100	equals	166	5	2
Travelling Expenses	„ £64/1/8, plus 11471½ x £1/0/11 per 100	equals	184	1	1
Advertising	2½ per cent of £11471/10/-	equals	286	15	9
Bad Debts	½ per cent of £11471/10/-	equals	57	7	2
Despatch Wages	Fixed £72/6/4, plus 11471½ x 5/3½ per 100	equals	102	13	2
Despatch Expenses	„ £14/14/10, plus 11471½ x 9/7 per 100	equals	69	14	2
			£866	16	6

Statement Showing—

1. Forecasted Marketing Expenses on £12250. Turnover Programme.
2. Actual Expenses Incurred on £11471 10s. Turnover Programme.
3. Expenses on £11471 10s. Turnover Programme, calculated at Flexible Budget Rates.

Items	Forecast £12,250 0 0	Actual £11,471 10 0	Budget £11,471 10 0	Over	Under
Salesmen's Salaries	170 17 6	170 17 6	166 5 2	4 12 4	
Travelling Expenses	192 5 0	198 17 3	184 1 1	14 16 2	
Advertising	306 5 0	306 5 0	286 15 9	19 9 3	
Bad Debts	61 5 0	82 4 6	57 7 2	24 17 4	
Despatch Wages	104 14 6	103 19 10	102 13 2	1 6 8	
Despatch Expenses	73 9 10	75 14 7	69 14 2	6 0 5	
	£908 16 10	£937 18 8	£866 16 6	£71 2 2	

could be allowed. Using the results thus obtained the total Marketing Expenses in relation to any turnover can be quickly calculated. Figure No. 74, however, supposes that though the absolute minimum was presumed to be £12,250, the actual turnover fell even lower and was £11,471/10/-. It is desired to see whether the actual expenses were in line with what the Budget would have been on this turnover figure. Figure No. 74 shows that actual expenses exceeded budgetary standards by £71/2/2.

In the case of the items making up the Cost of Sales it is generally wise to link the expenses with a certain productive programme. For example, in the case of the Tobacco Factory, the component items in the total cost of sales may be calculated in relation to a productive capacity of 8,100 lbs. The individual costs for leaf, ingredients, labels, tins, etc., and packages and

FIGURE No. 75.

CALCULATION OF CONSTANT AND VARIABLE EXPENSE TOTALS FOR PREPARATION OF A FLEXIBLE BUDGET.

Manufacturing—Materials, Labour and Expenses—

Leaf—Variable, 93/10 per 100lbs. (380 divided by 8100).
Ingredients—Variable, 27/6 per 100 lbs. (£111/5/- divided by 8100).
Labels, Tins etc.—Variable, 25/- per 100 lbs. (£101/5/- divided by 8100).
Packages and Sundries—Variable, 5/- per 100 lbs. (£20/5/- divided by 8100).

Wages—

Sales	10,000 lbs.	Wages	£191	6	5
"	8,100	"	162	0	10
Difference ..	1,900		£29	5	7

Fixed £37 4 5
Variable .. .. £1 10 10 per 100 lbs.

Repairs—

Sales	10,000 lbs.	Repairs	£5	0	0
"	8,100	"	4	1	0
Difference ..	1,900		£0	19	0

Variable .. .. 1/- per 100 lbs.

Manufacturing Expenses—

Sales	10,000 lbs.	Mfg. Exps.	£61	8	2
"	8,100	" "	49	15	7
Difference ..	1,900		£11	12	7

Variable .. .. 12/3 per 100 lbs.

sundries are set forth in Figure No. 75. The same method as was used for calculating Marketing Expenses is used in connection with Wages, Repairs and Manufacturing Expenses except that the figures of 10,000 lbs. and 8100 lbs. are used instead of Sales Volume. In the case of excise, the amount is purely variable expense calculated on the amount produced.

This method has much merit where there is no costing system in operation. The calculations are simple, yet give quite an accurate picture of what the total expenses at any programme should amount to. It is felt that many manufacturing businesses could, with profit, begin Flexible Budgeting by adopting this method.

The Fifth Method.

This treatment differs from those preceding as it attempts to fix the variable and fixed cost proportions purely from the mathematical approach. It is designed primarily to obtain such proportions in respect to the total costs or to cost of sales, but the method can be used in relation to any individual item of cost. The necessary information can take the form of expense totals worked out in connection with any varying volumes of sales or the results of three or four or more periods can be analysed. In Figure No. 76 a simple illustration of this method of arriving at the fixed and variable expense proportions is given and it is assumed that sales amounting to £50, £60, £70 and £80 are to be analysed. The total costs are £45, £48, £51 and £54 respectively, the profits being £5, £12, £19 and £26. In addition, the cost of sales in relation to each volume of turnover is also shown and it is desired to ascertain what proportion, firstly, of total costs and secondly, of cost of sales, is made up of variable expense. The first thing to do is to multiply the sales figure by itself, for example, 50 x 50, etc. and then multiply the total costs figure by the corresponding amount of sales, for example, 50 x 45. The cost of sales can also be treated in the same way (50 x 35) and the various columns are then added and the total of the sales x sales column is multiplied by the number of periods, in this case 4. From this figure is subtracted the total of the sales for four periods multiplied by itself. The total costs and the cost of sales figures are treated similarly. In order to ascertain the percentage of variable expense the difference in the treatment of costs in this way is divided by the difference in sales. The example in Figure No. 76 should be easily followed and it will be seen that the variable percentage of total costs would be 40 per cent, whilst that of cost of sales would be 50

FIGURE No. 76.

CALCULATION OF VARIABLE AND FIXED COST PROPORTIONS.

Sales	Total Costs	Sales x Sales	Sales x Total Costs	Cost of Sales	Sales x Total Cost of Sales
80	60	6,400	4,800	35	1,750
90	64	8,100	5,760	40	2,400
100	68	10,000	6,800	45	3,150
110	72	12,100	7,920	50	4,000
£380	£264	£36,600	£25,280	£170	£11,300

Total Costs—

4 x 36,600 = 146,400	4 x 25,280 = 101,120					
380 x 380 = 144,400	380 x 264 = 100,320	Variable				
2,000	800	Percentage	800 ÷	2,000	=	40%

Cost of Sales—

4 x 17,400 = 69,600	4 x 11,300 = 45,200					
260 x 260 = 67,600	260 x 170 = 44,200	Variable				
2,000	1,000	Percentage	1,000 ÷	2,000	=	50%

Sales	Total Costs	Fixed	30% Variable	Cost of Sales	Fixed	50% Variable
80	60	28	32	35	10	25
90	64	28	36	40	10	30
100	68	28	40	45	10	35
110	72	28	44	50	10	40

per cent. At the bottom of this figure will be found the proof of the correctness of these calculations. 40 per cent variable of total costs deducted from the sales figure gives, in each case, the fixed expense of £28. In the case of the cost of sales the fixed expense is £10. It can be accepted that mathematical proof of the validity of this method of ascertaining costs could be given but it is considered that there is no necessity for the development of this theme further. (This matter has been developed very fully and admirably by the late Mr. C. E. Knoeppel in connection with his studies of the Profitgraph in "Managing for Profit.") Figure No. 77 takes, as a practical example, the figures set forth in Figure No. 70 except that, to facilitate working, 10 per cent of each total has been used. It will be seen from this that the variable expense works out at 70·966 per cent, giving a fixed cost of £583 in relation to each turnover.

The value of the foregoing lies in the fact that it is a simple, yet effective method of obtaining the percentages of variable and fixed expense when a minimum of information is available. There is actually no necessity to have any kind of costing system in operation in order to use this method. Practically all the information can be obtained from an ordinary Trading and Profit and Loss A/c. Here again, however, the validity of the answers from a comparative standpoint depends upon how representative are the figures which are analysed in the first instance. It is impossible to obtain the full benefits arising from the knowledge of correct costs without a costing system and this method is probably the best available where itemised costs have never been calculated. If the figures over a number of periods are analysed and a Profit Control Chart similar to that shown in Figure No. 68 is prepared, it should be possible to obtain what could be considered as the normal variable expense rate. Where it is desired to commence variable budgeting and detailed costs are not available this method probably offers the best possible approach.

The Sixth Method.

Whilst all of the foregoing methods will be found at times most useful, the ideal flexible budget can only be prepared when complete costing details are available. This method brings the budget more directly into the sphere of standard costs, or possibly, to put the matter more correctly, makes use of standard costs for the purpose of compilation and control. A knowledge of standard costs is really essential in order to carry out the programme.

Under this method, standard rates for labour, standard allowances for materials and standard allotments for expenses

FIGURE NO. 77.

CALCULATION OF VARIABLE AND FIXED COST PROPORTIONS.

Sales	Total Costs	Sales x Sales	Sales x Total Costs	Fixed	Variable
£3,304	£2,928	10,916,416	9,674,112	583	2345
£2,360	£2,258	5,569,600	5,328,880	583	1675
£2,832	£2,593	8,020,224	7,343,376	583	2010
£3,777	£3,263	14,265,729	12,324,351	583	2680
£4,249	£3,598	18,054,001	15,287,902	583	3015
£4,721	£3,934	22,287,841	18,572,414	583	3351
£21,243	£18,574	79,113,811	68,531,035		

6 x 79,113,811 = 474,682,866   6 x 68,531,035 = 411,186,210

21,243 x 21,243 = 451,265,049   21,243 x 18,574 = 394,567,482

23,417,817   16,618,728

16,618,728 ÷ 23,417,817 = 70·966% = £15,076.

Fixed Cost = £18,574 less £15,076 = £3,498.

£3,498 for 6 units = £583 for 1 unit.

are made in relation to each particular product manufactured and estimates are then made of all other expenses. The expected sales programme is shown in the sales budget in the ordinary way, and from this information there is developed a complete set of statements covering the whole of the expected transactions, both in production and selling. Machine and other rates commonly found in connection with standard costs are compiled, and through such methods the standard cost of each item in the manufacturing programme is ascertained. Furthermore, from such particulars the total of all manufacturing costs becomes available, and the total of all selling and administrative costs. It is then possible to prepare the ordinary cost of sales statement and finally to arrive at the amount of net profit.

As labour and expense rates will have been made out, and, furthermore, as the precaution of analysing each expense into fixed and variable elements would have to be taken, it would be a simple matter to arrive at the extra expense necessary to cover a larger manufacturing programme. Full cognisance should be taken of the importance which the fixed and variable expense rates would probably play, the information thus acquired in the preparation of the main budget in all probability being all that would be necessary to make up a budget showing the estimated figures based on any turnover. Therefore, when the period ended (for example, at the end of the month) and the actual sales of each and all commodities became known, it would be immediately possible to prepare a budgetary statement worked out on the realised turnover. When such a statement had been prepared the figures would be compared with the actual results for the period. Discrepancies would be noted and an investigation made of all those expenses which had exceeded estimates, or what was considered a fair allowance.

Under these conditions it would be necessary to prepare the following statement—

1. The Budget figures—based on the estimated production and selling activity for the period, and arriving at estimated profits by means of budgeted standards.
2. The Actual figures—showing in full actual results obtained.
3. The Budget based on actual turnover and production results calculated at budgeted standard rates.

It is to be noted that only through standard or estimated costs can this be done. Even when a standard costing system is not in operation, the work done in preparation of the budget often takes the form of estimates of costs without the installation of a costing system.

The following example is designed to show the method of operation used in what may be termed as Profit Control Budgeting through the Flexible Budget under this sixth method—that is, where full information in relation to individual costs is available. The details will be found in Figure No. 78.

It can be assumed that there are three products, A, B and C and at an estimated normal capacity of £100,000 sales, £30,000 would be of Product A, £30,000 of Product B and £40,000 of Product C. An analysis of costs is set out in part (a) of Figure No. 78, Budgeted Standards. It will be seen that the profit on Product A is 38 per cent, on Product B is 37·5 per cent whilst on Product C it is only 5 per cent. A table is also given showing the combined results of A, B and C. When the Budget is prepared, the forecasted sales totals are A £20,000, B £24,000 and C £36,000, making £80,000 in all. At the rate of profit based on normal capacity the amount of profit for this programme would be £18,400. During the period, certain happenings occurred which reduced actual sales considerably and meant that the totals reached were, A £15,000, B £18,000 and C £27,000, making £60,000 in all. Actual production which was originally budgeted for in accordance with sales totals varied from the actual sales, and based on selling values the figures were A £18,000, B £12,000 and C £30,000. Whilst the total production was the same in amount as the sales, the stock of Product A was increased by £3,000 (selling value) Product B was £6,000 less, and Product C £3,000 more. Though, therefore, the selling totals of production and sales were the same, actually stock was increased by £645 when these differences in the various products were taken into account at standard manufacturing cost. The profit on actual sales at the normal capacity standard rate would be £13,800. The variation in manufacturing expense would be £1,420 which would mean that this was the amount that manufacturing expense had exceeded what it should have been at normal capacity rates. In other words, because of decreased production, manufacturing expenses exceeded estimates by £1,420. Similarly, the variation in selling expense on account of smaller sales was £1,610. Section (c) of this figure shows the profit on turnover of £60,000 based, firstly, on normal capacity standard cost rates. Allowing for the variation in volume which made differences of £1,420 in Manufacturing Expenses, £800 in Administrative Expenses, £1,610 in Selling Expenses and £395 in Financial Expenses, the net profit was £10,235, making a difference of £4,225 shortage due to decrease in sales volume. This figure of £10,235 represents the budgeted profit on the actual sales volume and it becomes necessary to compare this with the actual profit shown by the Profit and

FIGURE No. 78.

COMPARISON OF ACTUAL PROFITS WITH BUDGETED STANDARDS.

(a) BUDGETED STANDARDS.

BASED ON NORMAL CAPACITY.

Product "A"—£30,000. Product "B"—£30,000. Product "C"—£40,000.

Particulars	Fixed	% Variable	Standard % at Normal Capacity	Total %
Product "A"				
Material		20	20	
Labour		18	18	
Manufacturing Expense	£750	5	7·5	45·5
Administrative Expense	600	2	4	
Selling Expense ..	1200	7	11	15
Financial Expense ..	150	1	1·5	1·5
	£2700	53	62	62
Profit				38
			Sales ..	100
Product "B"				
Material		18	18	
Labour		20	20	
Manufacturing Expense	£1200	6	10	48
Administrative Expense	600	2	4	
Selling Expense ..	900	6	9	13
Financial Expense ..	150	1	1·5	1·5
	£2850	53	62·5	62·5
Profit				37·5
			Sales ..	100

FIGURE No. 78—Continued.

COMPARISON OF ACTUAL PROFITS WITH BUDGETED STANDARDS.

(a) BUDGETED STANDARDS.

BASED ON NORMAL CAPACITY.

Product "A"—£30,000. Product "B"—£30,000. Product "C"—£40,000.

Particulars	Fixed	% Variable	Standard % at Normal Capacity	Total %
Product "C"				
Material		40	40	
Labour		20	20	
Manufacturing Expense	£1600	8	12	72
Administrative Expense	800	2	4	
Selling Expense ..	2000	10	15	19
Financial Expense ..	800	2	4	4
	£5200	82	95	95
Profit				5
			Sales ..	100

COMBINED PRODUCTS "A," "B," AND "C."

Particulars	Fixed	% Variable	Standard % at Normal Capacity	Total %
Material		27·4	27·4	
Labour		18·8	19·4	
Manufacturing Expense	3,550	6·5	10·05	56·85
Administrative Expense	2,000	2·0	4·0	
Selling Expense ..	4,100	7·9	12·0	16·0
Financial Expense ..	1,100	1·4	2·5	2·5
	10,750	64·0	75·35	75·35
Profit				24·65
			Sales ..	100

FIGURE No. 78—Continued.

(b) PROFITS ON FORECASTED AND ACTUAL RESULTS AT BUDGETED STANDARDS.

1. Forecasted Sales.

Product	Sales	Proportion %	% Profit	Amount of Profit
"A"	20,000	25	38	7,600
"B"	24,000	30	37½	9,000
"C"	36,000	45	5	1,800
	£80,000	100	23	£18,400

2. Profit at Standard Rates on Actual Sales and Production.

Product	Actual Sales	%	Actual Production	Change in Stock Total	Change in Stock Total at Standard Manfg. Cost	Profit on Actual Sales at Standard Rate
"A"	15,000	25%	18,000	+ 3,000 (more)	+ £1,365 (more)	£5,700
"B"	18,000	30%	12,000	— 6,000 (less)	— £2,880 (less)	£6,750
"C"	27,000	45%	30,000	+ 3,000 (more)	+ £2,160 (more)	£1,350
	£60,000	100%	£60,000	—	+ £645	£13,800

3. Variation in Manufacturing Expense.

Actual Production	At Standard Cost (Normal Capacity)	At Standard Rates	Variation
£18,000	X 7·5% = £1,350	X 5% = £900	
£12,000	X 10% = £1,200	X 6% = £720	
£30,000	X 12% = £3,600	X 8% = £2,400	
		Fixed Cost £3,550	
	£6,150	£7,570	£1,420

4. Variation in Selling Expense.

Actual Sales	At Standard Cost (Normal Capacity)	At Standard Rates	Variation
£15,000	X 11% = £1,650	X 7% = £1,050	
£18,000	X 9% = £1,620	X 6% = £1,080	
£27,000	X 15% = £4,050	X 10% = £2,700	
		Fixed £4,100	
	£7,320	£8,930	£1,610

FIGURE No. 78—Continued.

(c) COMPARISON OF FORECASTED AND ACTUAL PROFITS.

Particulars	Standard Costs at Normal Capacity	Standard Costs on Actual Results	Volume Variations Normal Capacity and Forecasted Results	Actual Costs as per P. and L. Statement	Cost Variation Actual over Forecasted	Variation
Sales	£60,000	£60,000		£60,000		
Material .. (Incurred at £60,000 Production)	£17,040	£17,040		£18,500	£1,460	more than budget
Labour ..	£11,700	£11,700		£12,000	300	" "
Manufacturing Exp.	£6,150	£7,570	£1,420	£7,270	300	less than budget
	£34,890	£36,310		£37,770	£1,460	
Less Increase in Stock ..	645	645		420	225	
Manufacturing Cost of Sales	£34,245	£35,665	£1,420	£37,350	£1,685	
Gross Profit	£25,755	£24,335		£22,650		
	£60,000	£60,000		£60,000		
Administrative Expenses	£2,400	£3,200	£800	£3,000	£200	less than budget
Selling Expenses	£7,320	£8,930	£1,610	£9,500	570	more than budget
	£9.720	£12,130	£2,410	£12,500	£370	more than budget
Financial Expenses ..	£1,575	£1,970	£395	£2,100	130	more than budget
	£11,295	£14,100	£2,805	£14,600	£500	
Net Profit on Cost of Sales Basis	£14,460	£10,235	£4,225	£8,050	£2,185	less than budget
	£25,755	£24,335		£22,650		

FIGURE No. 78—Continued.

(c) COMPARISON OF FORECASTED AND ACTUAL PROFITS—Continued.

Standard Profit at Normal Capacity			£14,460
Variations			
Less			
Losses Due to Manufacturing Volume	£1,420		
Selling Volume			
Selling Expenses	£1,610		
Administrative Expenses ..	800		
Financial Expenses	395		£4,225
Standard Profit at Actual Results			£10,235
Less			
Losses on Materials (e.g. Purchases, Waste, etc.)	£1,460		
Losses on Labour (e.g. Increased Award Rates)	£300		
Adjustment of Stock ..	£225		
Increased Selling Expenses (e.g. Increased Award Rates)	£570		
Increased Financial Expenses (e.g. Increased Interest Rate)	£130		£2,685
			£7,550
Plus			
Savings in Manufacturing Expense .. .. (e.g. Various Economies)		£300	
Savings in Administrative Expense .. .. (e.g. Various Economies)		£200	500
Actual Net Profit			£8,050

Loss Statement. An analysis of the two sets of figures shows that the following increases over budgeted figures were sustained—

Material	£1,460
Labour	300
Selling Expenses	570
Financial Expense	130

On the other hand, Manufacturing Expense was £300 under budget and Administrative Expenses, £200 under. Instead of obtaining a profit of £10,235, therefore, the total actually made was £8,050. An analysis of the causes of the various increases

and decreases would then be made by an inspection of cost records and it is suggested that the following reasons may be responsible—

1. Losses on materials could be due to increased prices and excess waste due to carelessness and to inferior articles.
2. Labour costs may have been caused by increased awards.
3. Selling expense increases may also have been caused by higher awards or more travelling.
4. Savings in manufacturing expense may have been the result of greater efficiency and various economies.
5. Administrative expense savings may also have been due to economies effected.
6. The adjustment of stock item, £225, may have been due to pilferages, obsolescence, or reduction in values.

In connection with this last item it will be seen that whereas the stock should have been increased by £645 the actual additional amount was £420.

In analysing the foregoing it is necessary to bear in mind that there are really three sets of figures portrayed. Normal sales are first developed, actual sales, both at allowed costs and actual costs, are also shown and thirdly, actual production is set forth. The difference between normal and allowed costs at actual turnover, shows the relative over-absorption or under-absorption of fixed costs or variations due to volume which are often incontrollable variations. When the Profit and Loss Account is prepared it becomes possible to compare actual results against allowed costs based on actual turnover and any variations in this regard are, generally speaking, controllable.

It will be seen that the foregoing gives comprehensive information concerning the whole of the results and it is possible to ascertain, not only the differences in costs (and thereafter the reasons for them) but also the difference in profit due to changing the proportions of sales of Product A, B and C. It is admitted that there are few businesses which can be reduced to Products A, B and C but the illustration given portrays the method of approach. The variation necessary in procedure depends upon the individual circumstances encountered in the business under review, and it is frequently possible to segregate manufactured products into groups, analysing results in relation to such.

Conclusion.

Profit Control is now definitely one of the most important elements in Scientific Management and it will, in future, become more widely known and more systematically used. It has a place in every business and size need make little difference. Obviously, the small business does not want an elaborate system of Variable Budgeting but the sooner it begins to segregate its amounts so that the variable and fixed proportions of each expense become known, the sooner will it be able to proceed towards increasing profits or at least the retention of existing profits. It is not suggested that Profit Control through Variable Budgeting can be a cure-all. It is not suggested that Variable Budgeting will make profit a certainty, but it is asserted that any business can be better managed where Variable Budgeting is an aid used in such management. Prepared and used reasonably and carefully, any form of Variable Budget will be of the greatest assistance towards obtaining better results, whether such better results take the form of increased profit, the retention of existing profits, the turning of a loss into a profit or in decreasing losses.

CHAPTER XI

FUNCTIONAL BUDGETS

Development of the functional budget—aims and objects—essentials of the functional budget—divisions of responsibility—the form of accounts—fixed or flexible—extensions of responsibility—example.

Development of the Functional Budget.

The budgets so far listed have had as their object increasing control over results so as to promote more certainty in dealing with departures from the budget. The fixed budget is limited in the information it gives in relation to discrepancies; the multiple budget is more helpful in this regard; but it is really the flexible budget which enables the closest check and the finest comparison to be made between budgetary estimates and actual results. It is axiomatic that with control over the figures there should be associated at least a certain amount of responsibility for faults and discrepancies. Sometimes, however, under ordinary circumstances, it is well-nigh impossible to hold any particular person responsible. From this fact came a suggestion that budgetary control would be greatly strengthened if more definite responsibility could be allotted. Therefore the functional budget was evolved, the purpose being to associate various costs, not only with various organisation units, but with certain executives, so that power and responsibility would both be vested in some particular officer. Thus each expense would be a direct and particular responsibility, no matter how that expense actually affected other organisations within the business.

Aims and Objects.

The principle of this method can perhaps best be seen by taking the example of the Sales Manager. Even with the fixed budget, he is responsible for the selling activities of the business, and in most cases, for the selling expenses. This department readily lends itself to a very strict division of responsibility. Some other departments, however, do not do so, and

the functional budget sets out to remedy this state of affairs. The aims of charging to organisation instead of to accounts affected are, firstly, to give control by localising liability for waste or excess, and, secondly, to prevent the necessity for any of those apportionments which can so greatly add to the difficulties of accurate comparisons.

This method of charging to organisations and holding the leader of each organisation centre responsible depends for its effectiveness upon the degree of accuracy with which these organisations can be isolated. In many cases this will not be a difficult matter, but there must be no overlapping of functions. The demarcation must be complete and conclusive. When this stage is arrived at, responsibility is definitely tied down. (See Figure No. 79.)

Essentials of the Functional Budget.

The following are three basic requirements for a system of budgetary control based on functional organisation—

1. An organisation wherein duties of each executive are sufficiently clearly defined as to avoid overlapping and ambiguity.
2. An accounting or statistical system corresponding to units of organisation respectively and allowing definite comparisons of budget and actual amounts in terms of organisation responsibility.
3. Flexible features whereby comparisons can be made for any volume of turnover.

Divisions of Responsibility.

It will be seen that there are some drastic, yet sensible, alterations in the method of control suggested. Most important of all there is the necessity for separating functions in such a manner as will enable responsibility for each function or group of functions to be definitely traceable to one particular person. It is to be noted that the idea involves more a classification of functions than a segregation of departments. For example, there could be the following division of functions—

1. General Manager.
2. Factory Manager.
3. The Purchasing Officer.
4. The Stores Superintendent.
5. The Works Engineer.
6. The Chief Inspector.
7. The Sales Manager.
8. The Merchandise Manager.

9. The Accountant.
10. The Secretary.
11. The Despatch Manager.
12. The Staff Manager.
13. The Credit and Collection Manager.
14. The Advertising Manager.

Figure No. 79 shows a chart indicating how the division of responsibility can be undertaken.

It will be seen how necessary, and sometimes how difficult, it is to segregate the various duties so as to leave a clear line of demarcation in each case. Overlapping would destroy the whole idea of the control. It is essential that each executive should have his own fixed sphere, that his responsibility inside that sphere should be complete, and outside of it should be nil.

The Form of Accounts.

The next step is to see that the form of the accounts is changed or is supplemented by allowing all expenditure to be grouped into accounts which would correspond with those functions. Thus, separate accounts would be opened for each of the headings mentioned in Figure No. 79 and the whole of the expenses incurred in relation to each function would find its way into that account. Williams* pleads, with a good deal of justification, that the method of charging expenses to certain accounts which have no real meaning in relation to costs or control should be considered as somewhat out of date. This would have the effect of obviating much in the way of proportioning expenses. Thus, it is necessary to see that the amount spent on rent is chargeable to the account of the official in charge of this matter. It may be a matter for the factory manager, or for the accountant, or the secretary, but in any case it should be charged to the one in control of the item and to no one else. It does not matter what the rent is for, or for whom incurred. Similarly, maintenance would be charged to the factory manager, or possibly to the maintenance manager where there was such an official. It would not matter whether the repairs were incurred in connection with an electric motor or a typewriter, as long as each type of repair came under the jurisdiction of the maintenance manager. If, however, the typewriter repair was a matter for the accountant, and had nothing to do with the maintenance manager it would be charged to the accountant, assuming that there was an account for that name, indicating a division of responsibility.

* J. H. Williams from "Scientific Management in American Industry."

FIGURE No 79.

FUNCTIONAL RESPONSIBILITY ACCOUNTS CHART.

Account	A. Black *Secretary*	B. Smith *Accountant*	H. Gray *Sales Manager*	L. Rich *Factory Manager*	M. Lowth *Despatch*	B.Porter *Purchasing*
Sales			X			
Discounts			X			
Freights					X	
Stocks—Mfd. Tob.				X		
Raw Materials				X		
Leaf in Process				X		
Purchases						X
Manufacturing Wages				X		
Manufacturing Expenses						
Power and Light				X		
Supplies				X		
Repairs				X		
Insurance		X				
Depreciation				X		
Rates		X				
Excise		X				
Other Accounts						
Salaries—Sales			X			
Trav. Exs.—Sales			X			
Advertising			X			
Bad Debts		X				
Despatch Wages					X	
Despatch Expenses					X	
Rent and Rates	X					
Legal Expenses	X					
Management Salaries	X					
Directors' Fees	X					
Printing and Stationery		X				
General Expenses		X				
Post and Tel.		X				
Office Expenses		X				
Audit Fees	X					
Insurance		X				
Deprec. on Furn. and Fitt.		X				
Sal. and Wages—Office		X				
Sundries		X				
Exchange		X				
Sundry Creditors		X				
Reserves	X					
Capital	X					
P and L A/c.	X					
Sundry Debtors		X				
Buildings		X				
Trademarks and Patents	X					
Investments	X					
Cash		X				
Collections		X				
Records		X				
Plant and Machinery				X		

Fixed or Flexible.

It will be gathered that this method of control can be used quite easily in connection with a fixed budget, simply by apportioning the various accounts to the executives responsible, rather than treating all expenses in the classification adopted by the accounting system. Where this method of functional responsibility is to be used in connection with the flexible budget, it will be understood that it involves the preparation of the total expenses relating to each set of functions in relation to various turnovers. Here, of course, the division into fixed and variable expenses would be attempted. By this means, budgets in relation to any volume of turnover within a given range would be set up and the budgetary figures would be composed of sub-budgets, representing functional responsibility.

Extensions of Responsibility.

The difference between the Functional Budget and those previously described—both fixed and variable—lies in functional responsibility, rather than accounts responsibility. For example, even the foreman can be brought within such. He would become responsible for all expenditures actually made exclusively for his department and therefore under his control. Expenditures incurred in the factory as a whole even though they concern him would not be regarded in this category but would rather be included as part of the responsibility of a service department executive or some such person. Expenses which the foreman would be held responsible for would include manufacturing supplies, spoilage, supervision, inspection, direct labour cost and light, heat and power, where such can be directly controlled by him. The budget would be prepared upon a flexible basis, preferably after the style of the Multiple Budget so that the foreman once knowing his rate of production would also immediately know how much his allowable expenses would be. This information would come to him by means of frequent and prompt reports giving simple figures relating to production and expense. In some cases weekly, in others daily reports may be necessary. A form similar to that in Figure No. 70 could quite well be used. Where budget discrepancies show that the position is not satisfactory the works superintendent would take the matter up with the foreman pointing out where the troubles are to be found. Every assistance and guidance should be given to the foreman in order to enable him to improve his results and sympathetic constructive criticism from the superintendent will frequently meet with considerable success.

Conditions for Effective Control.

There are three basic principles which should underlie any method of management through which the chief executive can exercise effective control—

1. The expression of all results in common terms. That is, a statement for the chief executive is literally merely a co-ordinated copy of the last lines of the statements of those to whom he had delegated responsibility and duties.
2. The classification of expenditures according to responsibility for each transaction out of which they have grown, as distinguished from the nature of the expenditure itself.
3. The establishment of flexible standards which are readily adjusted to changing conditions in volume of business, price of product, and cost of material and labour.

In the case of production for example, where manufacture is divided into, say, two essential products and separate supervision is operating in relation to each, costs would then have to be apportioned against the executive in charge of the production of each commodity. The method of approach commences with the setting of standards covering functional areas relating to each of the various commodities. These would include the following—

1. The number of units of each commodity to be sold within the period.
2. The cost price unit and total.
3. The material cost—unit and total.
4. The direct labour cost—unit and total.
5. The ratio of materials and labour costs to list price.

It is necessary to use the utmost care in arriving at these standards, as they are to be used as yardsticks in order to gauge the efficiency of those individuals who will be covering these various duties. When these figures have been obtained, they should be summarised so as to arrive at totals for the commodity. The next step is to divide the whole of the operations into certain major operating units, such as production shops, routing, cost, stores, maintenance, materials, direct labour, overhead, distribution etc. Separate particulars are taken out in relation to each of these, and when totals are arrived at they are incorporated in a further statement which would show the total results of all the major operating units chargeable against each executive. This procedure is carried out in relation to what is expected to be the absolute minimum and absolute maximum

sales which could possibly be expected. When all these figures have been finalised, it is possible to arrive at the fixed cost and percentage of variable cost, after the manner described on page 265.

As will be seen, this method represents an attempt to furnish a method of what may be comparatively easy control and one which is able to be developed very quickly. It is still necessary to arrive at the standard budget figures, but these are calculated in responsibility centres rather than product costs. The idea of flexibility is made practicable through the operation of the principles of the flexible budget, and thus the relationship between budgeted and actual can be shown.

Example of Functional Budgeting.

Figure No. 74 illustrated the method by which all the accounts under the control of the Sales Manager would be examined. The following procedure would be adopted—

1. The list of accounts covering items for which the Sales Manager must assume responsibility would be shown.
2. Examine each account and prepare a statement showing the fixed cost and the rate for variable expense.
3. Prepare a budgetary statement setting forth each of the accounts above referred to. In the first column should appear, calculated on a budgetary estimate of sales, the costs which should be on the basis of the figures arrived at as above pertaining to a specific turnover. This forms the budgetary estimate. At the end of the period, when the actual sales and expenses are known, they are inserted in the third column. In the second would appear costs based upon actual sales at budget fixed and variable rates.
4. A list of the differences between actual expenses and budget expenses covering actual turnover should be prepared and the discrepancies examined.

This method of control is sometimes found to be much easier to install than other systems of budgetary control, and sometimes it can be used with little dissection of individual costs before its preparation. It is therefore sometimes possible to avoid much of the labour which very often frightens executives, and leads to procrastination in the adoption of control methods. At the same time, it must be understood that when any such method, having a short cut as its aim, is adopted, the greatest care must be taken to see that the figures calculated are a reasonably accurate presentation of the true position.

PART 3

SPECIAL CONSIDERATIONS

Chapter XII

THE PSYCHOLOGICAL ASPECT OF BUDGETARY INSTALLATION

Co-operation of employees—resistance to budgeting—necessity for individual approach—the attitude of the executive—the budget as an aim—incentives—the psychological basis of the budget—value of purpose—division of responsibility—the psychological value—conclusion.

(a) *Resistances to the Budget.*

It is impossible to place too much emphasis upon the psychological aspect of Budgetary Installation. This may be explained as being at least partly so because some of the greatest benefits and effects of budgetary installation are definitely psychological in character. Psychology is playing a more important part in business and business control every day, and co-operation is nowadays not quite so much demanded as sought.

Co-operation of Employees.

A premium is placed on success in the installation of a budget when every effort is made to secure the aid and co-operation of the employees. Largely at all events, the success likely to attend the efforts is in their hands. One of the most favourable aspects of industry to-day lies in the fact that the present day workman shows not only that he can frequently absorb responsibility, but that he is becoming increasingly fitted to take a share in the lesser management of affairs. He is able to absorb the essentials; is realising more that the success of the organisation means his success; that profit sharing and bonus schemes give him a definite financial interest in the success of the concern; and that his part in the matter may not be so meagre after all. This particularly applies to the factory foremen, of course, and success in the factory can generally largely be interpreted through the degree of success attending the efforts of foremen.

Resistances to Budgeting.

As has been the case with all new innovations, Budgetary Control has been looked upon with a certain amount of suspicion both by the workman and even by the departmental chief. Neither has been very enthusiastic, especially in the early stages. In the case of incompetence on the part of the employee there may be reason for this attitude, but even where most efficient methods have always been in operation, the setting up of a budget has not been received with enthusiasm. There are various reasons for this, but the fact remains that this situation has to be changed, and replaced by helpfulness and co-operation. It may be no easy matter, but quite possibly the degree of success attending this task will govern the success of the installation, especially in the early stages. Speaking of such resistances E.T. Elbourne, in "The Marketing Problem," says—

"The Sales Manager does not like to make an exhaustive sales analysis. He is forced to put down in black ink on white paper a sales estimate for a particular period, and he knows that he will be expected to perform on the basis of his forecasts. He resents being compelled to evaluate sales prices, in brief, to project his mind into the future, think intelligently and reduce his thoughts to an intelligent opinion.

The Chief Executive himself hesitates at first to base his operating plans on a sales forecast, even though prepared by his own sales organisation. He confesses his lack of confidence in the forecast, and he will have no confidence unless he visits the several sales territories himself.

The Production Manager resists the system. He must prepare monthly an operating schedule based on the sales forecast, set down in exact terms the cost of materials and supplies demanded by the sales allocations, together with the direct labour cost, the indirect labour and the manufacturing overhead, item for item in exhaustive detail. He himself is responsible for the operating schedule and always in his mind is the haunting thought, that each month his operating forecasts will be checked by the Executive Manager item by item. Does he know how to control his operating costs? Inevitably the monthly comparison will demonstrate the matter, and if he is inefficient it will be so proven on paper in his own handwriting.

The Manager of the Purchasing Department particularly resists the system. He has on hand a quantity of excess material, semi-obsolete and obsolete stuff which he is dimly conscious of, and he realises that when he is compelled to present his inventory in the light of a definite three months' inventory requirement, accurately balanced as to parts, and to set up under the title of 'For Liquidation through Future Operating or by Im-

mediate Scrappings' such inventory as is not required by the operating schedule, he will be called into the Executive Manager's office and toasted over an exceedingly warm fire.

The Advertising Manager will resist the system as he will have to confine himself to an appropriation for advertising limited to a definitely determined percentage of the sales volume as forecasted and he will be required to allot this advertising on the basis of the facts as set forth in the Sales Analysis.

The Treasurer or Office Manager will resist the system because he, too, will have allocated to administration and general expense a definite percentage of the sales dollar beyond which he cannot go.

There is no escape from it anywhere from the Chief Executive to the office boy. There are only one hundred cents in each dollar of income, and each cent of expense must pull its fair share of the dividend load or be squeezed out of existence.

Is it not plain that a system which by the very nature of it shall make every department head his own chief cost accountant and compel him to operate his department within definite bounds, or give a very intelligent answer why not, is a system of almost incalculable worth and merit?

It will be wise, therefore, on the part of any management considering installing such a system of operating control, to realise that to make it effective it must be believed in and receive hearty co-operation from all department heads throughout the organisation. It may take time to convince these heads of departments and divisions that such a system is good not only for the business but for themselves as individuals.''

Necessity for Individual Approach.

It is essential, therefore, that when a plan of budgetary installation is proposed considerable forethought should be given to the methods of winning the allegiance of the various departmental executives. Generally it will be found that these officers rapidly divide themselves into two groups—the one keen on clinging to the old methods, and the old ways; who look with suspicion upon innovations and reforms; and who, though possibly open to conviction, will probably die hard. The other group contains the progressives—those who are imbued with the necessity of keeping abreast of the times; who recognise that though not all new innovations have merit, every opportunity must be given to any worthwhile scheme, as therein lies the path of true advancement. These two sets of executives raise entirely different psychological problems. In the one case there is enthusiasm which may have to be curbed; in the other there will be a certain amount of persuasion necessary, perhaps

much humouring, and a gradual conversion to a more favourable view of the proposed installation. Sometimes at the bottom of this antipathy there is a natural conservatism, but at other times the nervousness arises from a knowledge and recognition of inefficiency. Each case may have to be tackled individually, overcoming the prejudices, stressing the benefits, and helping with sympathetic understanding, so that enthusiasm may at last be born. Individual circumstances will always play a large part. Occasionally the soft answer must give place to the stern rebuke; at times it will be necessary to order and not to discuss; but these situations must be dealt with as they arise.

The Attitude of the Executive.

The Chief Executive is and must be intimately related to this psychological factor. This relationship was well expressed by H. V. Coes in an address before the International Management Institute at Geneva in 1930. Speaking on the organisation for budget administration he said—

"One effective way in dealing with the two classes of problems, namely, psychological and technical, is to set up different agencies for dealing with them. In one Company, the chief executive reserved unto himself the right and privilege to deal with all the major pyschological problems and resistances in the administration of the budget and initially the same procedure was carried out in its installation He recognised that where an important member of the organisation or an executive felt that the budget was "cramping his style" or that he did not understand the full purpose of the budget procedure, it was his job to sell the budget idea, the budget and budgetary procedure to these individuals. On the other hand, he set up a separate organisation to deal with the ordinary routine and technical problems which arose during the installation and administration—comparison, determination of the procedure for clearing of information, the bases upon which the standards were to be established and the perfection of budgetary regulation technique. Again, the chief executive recognised that where several division chiefs would not accept as final or authoritative the ruling of one of his associates he would accept as final the ruling by the chief executive. So it is essential in installation of budgets and in budgetary installation to have the chief executive take an active interest in the matter and agree to handle those problems and deal with those resistances that can be effectively handled by him or his responsible deputy. This does not necessarily mean, of course, the burdening of the chief executive with a lot of minor and unimportant matters which can be effectively dis-

posed of long before they reach his office and most competent chief executives would know how to deal with such situations when they are confronted with them."

The Budget as an Aim.

The whole idea of budgetary education should be designed towards getting the workman to realise that budgeting is an aid —that it is there to help him—that it is something by which he is able to measure his own performances. It is there, not to be a handicap, but to aid him in becoming master of his job— to make his job conform to his own standards instead of allowing himself to conform to any inferior standard. By it, too, he can measure not only his own, but also the standards of those under his charge. They must measure up to their responsibility and he must measure up to his. With this idea in mind it is possible to obtain a clearer conception of the reasons in favour of allowing a man to have some say in the making of those estimates which he has to realise. "From the bottom up" is a much better policy than "from the top down," at least from a psychological view. The immediate result of allowing a man to have some hand in preparing his own goal will be found in a strong desire to reach the goal—setting out with a determination to accomplish the task. When no definite goal is held before him or despite all endeavours the goal seems impossible, there is little inducement for sustained effort.

Incentives.

To assist towards effective control, incentives can often be employed successfully, though satisfactory results may frequently be obtained without resorting to the incentive of cash payments. Frequently pride in his work and loyalty to his employers will be all that will be required in making an attempt to "beat a budget." The budget itself is a constant stimulus. It frequently gives something of the interest of a competitive game and there is a large measure of satisfaction in beating a standard set down as a test. Nevertheless, cash bonuses frequently bring results when other factors will not do so. It will often be found that the most effective way to improve results is through the pay envelope, but this places a grave responsibility upon those who are responsible for preparing and instituting the scale of bonus payments. There is much to be said, however, for the fact that where a budget represents a standard which it is anticipated should be reached by an officer worthy of his remuneration, improvements over the standards should mean that savings made as a result of such improvements should be shared between the organisation and the employee.

In many cases of budgetary installation experience has taught the great importance to be attached to the psychological factor. Careful planning and thought is as necessary to the psychological approach as it is to the formulation of the budget and the technical considerations included therein. "He that is not for us is against us" can be regarded as true also in this instance. It is necessary for the success of the installation and its subsequent use as an instrument of management that everybody taking part in its control should be seized with the necessity for doing everything possible to carry out its aims and should have a full recognition of its importance not only to the Company but to each individual as well.

(b) *The Psychological Basis of the Budget.*

The Value of Purpose.

The foregoing pages have dealt with the resistances likely to be encountered in the installation of a budgetary system and the methods by which these can be overcome or at least minimised. There is a psychological basis involved in budgeting and it is this which makes co-operation between employer and employee possible. Without going into details it is necessary briefly to review the psychological value of Purpose.

People are interested when an activity tends to keep occupying their attention and absorbing them by some appeal. The appeal may lie in the very difficulty of the task or in the downright enjoyment of its performance, or it may be in the anticipated approbation of associates in respect to proficiency. For people to be interested, attention has to pass the point of conscious effort and to become eager, immediate and spontaneous. Attention can be so commanded when we are actively engaged—have a definite object in view and recognise something at stake, something whose outcome is important for the individual. A display of interest is therefore a display of self-expressive activity. In this connection, William James, the eminent psychologist, says—

"To what do the better men owe their escape from monotony? And in the fluctuations which all men feel in their own degree of energizing, to what are the improvements due when they occur? In general terms the answer is plain; either some unusual stimulus fills them with emotional excitement or some unusual idea of necessity induces them to make an extra effort of will. Excitement, ideas and efforts, in a word, are what carry us over the dam."

We cannot be pleased with what we are doing and doing well unless we have some means of knowing that we are doing

well—knowing something of the results. What persists in purposive behaviour is the tendency towards some end or goal. The purposeful person wants something he has not yet got, and is striving towards some future result. Whereas a stimulus pushes him from behind, a goal beckons to him from ahead.

Division of Responsibility.

Taylor's principles in modern management can be classified under four headings, one of which can be described as the equitable division of responsibility. In every walk of life one of the most frequent causes of inefficiency and friction is the incorrect definition of functions. Under this heading we have, in the first place, overlapping—two or more parties attacking the same objective at the same time with the resultant inevitable clash of interests, jealousy and bad feeling engendered. But another evil resulting from this defect is the shirking of responsibility and the transfer of blame when matters go wrong. This is a most fruitful source of waste and of friction. Waste occurs because the higher placed man declines to take the steps or else ignores those which are necessary to be followed in order to achieve the best results, and friction occurs because, when things go wrong, the blame is so often passed down in an obviously unjust manner. The whole trouble is often due to the faulty division of responsibility.

The Psychological Value of the Budget.

The psychological basis of the budget, therefore, is to be found in the following—

1. It provides specific purpose.
2. It caters for personal responsibility.
3. It provides for recognition of achievement.
4. It necessitates division of responsibility.
5. It promotes co-operation.

The foregoing pages make it unnecessary to amplify these further.

Conclusion.

The whole subject can be summed up very aptly in the following words by J. P. Jordan (American Society of Mechanical Engineers, December, 1927)—

"The type of management which pays strict regard to psychological effects in controlling the various operations of a business institution is almost invariably successful. Whilst it is often said that in recent years management has been obliged to control in a manner different from that which obtained be-

fore, it is probably a fact that the most outstanding cases of successful management years ago were those which employed exactly the same methods as are successful to-day; but in recent years, management in general has been forced to give far greater consideration to the human factors of business than before. If one would analyse the various types of business management which have been used, it is believed that the final conclusion would be that the outstanding successes have been those where careful psychological analyses became the guide of the executives who composed the successfully managed business rather than some specific form of management. . . .

All executives who fail to appreciate that budgetary control has its greatest value in its psychological effects on the organisation as a whole, are absolutely lacking in one of the greatest essentials of business management.

Every key man in an organisation is required to visualise the future, to come through the moves of anticipated transactions before they have begun and to live through a specific period of future operations to such an extent that he will become thoroughly imbued with the necessity of making good on the figures which have been set up in the budget. The effect on the mind of each key man in such a case is tremendous. He assumes personal responsibility which otherwise could not possibly be assumed and very few men will shrink from assuming this responsibility when they are given the opportunity. Now if this does not seem to involve psychology I do not know what psychology is.''

So much for management, but management itself has its responsibilities, and the budget demands the best of an executive. He, too, has his psychological problems, but the budget aids him even more than it can be made to aid the workman. In the Bulletin of the Taylor Society, 1928/29, speaking on the budget as a medium of executive leadership, J. H. Williams has expressed the whole matter admirably in the following words—

''The greatest difficulty of leadership is to impart information without creating antagonism, which leads to an effort to find other ways of doing the thing rather than to understand the explanation.

Up to a certain age, which is about the time of finishing one's education, most people are more easily taught than afterwards. The time when the change takes place varies. Psychologists explain that it is natural to take pride in learning so long as one is frankly a pupil and that it is equally natural that when the pursuit of knowledge is over, one should resent

being given too much information. It is interpreted to imply a lack of knowledge and is resented as depriving one of the privilege of working out the problem in one's own way.

The budget properly handled furnishes a means of combining instruction and inspiration of creative activity, which is unique. To obtain the full benefit, responsibility and credit for effective work and economy should always be given to the person in a position to effect such economies. The job of the man higher up should be to help and support those responsible for effecting economies to exercise their own authority, but not to make decisions for them.

It is here that the budget comes in. Suppose the cost of a department, whether it be in an office or factory, has unduly increased or the quality of its work is unsatisfactory. The conventional procedure is for the executive in charge to send for the department head and show him the faults of his department. The department head has probably passed the period when his pride is in learning, and, however considerate the executive may be, the focussing of attention on faults will be regarded as criticism. If the department has been budgeted a different situation exists.

The mere existence of a budget, which it is the duty of the executive to enforce, relieves him of the personal equation. With the budget in hand, he may send for the department head. In place of his pointing out the unsatisfactory results achieved and what could or should have been done to prevent this, they go over the budget together to see what can be done to bring about the desired results. This avoids the necessity for finding fault. The executive should remember that if a department head does not deserve this kind of treatment the best thing he can do is to fire him, and put in his time on a more competent man.

You may wonder why all this cannot be done without a budget. The budget, whether flexible or not, takes unto itself the onus of the situation and puts the executive more nearly on a level with the department head. It puts them in the position of having a common purpose. This is more stimulating to the department head than you can imagine, unless you have recently been a department head and have had the experience. Also the existence of the budget as a medium of expression of results achieved, objectifies the conversation. There will be encouraging progress if the executive will avoid preaching and interest himself in developing the other man's ideas, rather than in exploiting his own.

The situation should be developed through questions as to what it should cost under this or that condition to achieve cer-

tain maximum and minimum results. Here comes the point of the flexible budget. You show the department head how, with this information, he can work out his fixed and variable costs, and measure his accomplishments under the exact conditions which prevail in the terms of weeks or months, at will. What is even more important, instead of telling him, you have caused him to analyse the situation, and to find out for himself what can and should be done.

You may say it would be easier to do the work yourself, but I want to suggest that this kind of thing is the essence of leadership, and that without this sort of patience and ability, one had best stay in the class of doers. There are three stages in the development of leadership— 1, Learning; 2, Doing; 3, Leading. The trouble is that people in the second stage want the prestige of leadership, without giving up the kick of doing."

Co-operation within the scope of the budget will mean co-operation within the organisation as a whole, and it is worth taking pains to ensure that it shall be there in maximum amount. It is far easier and better to be able to commend a man for his results than to have to dismiss him for his failures, yet the difference between these two actions perhaps lies in the way these matters are approached. The spirit of team work and the spirit of competition must be fostered—each employee is part of the organisation, but is also an individual unit working to a certain plan which must be attained.

Chapter XIII

BUDGETARY CONTROL UNDER AUSTRALIAN CONDITIONS

Development in other countries—the position in Australia—the costing problem—the budgeting problem—the sales budget—sources of Australian statistics—the budget period—sales analysis—the production budget—materials—purchasing—expense—selling expense—advertising—the cash budget—estimated profit and loss account—control—practical application.

Before proceeding to a study of the peculiarities existing in Australian business conditions and the manner in which Budgetary Control is affected by them, it is necessary to understand the principles of budgeting and budgetary control and to obtain some knowledge of the trend of events in America and Europe in relation to these matters. It is not suggested that everything in these pages is totally applicable to Australian conditions. But in order to know what is applicable, what must be discarded as being out of line, and what can be adapted to business conditions in Australia, it is essential to know sufficient about the whole subject to enable sane conclusions to be drawn. The principles at all events must be thoroughly understood.

Development in Other Countries.

It must be remembered that any general application of budgetary installation in its latest form is comparatively recent. Even in America, which is far ahead of any other nation, it is only now beginning to take shape in very definite form. The development of the flexible budget was accelerated by the last depression, and its rapid adoption testifies to the growing recognition of its value to business organisations. Each country is developing along its own lines and in accordance with its own conditions and requirements. In England the general mass of industry is slow in taking up these newer methods, possibly because of the traditional conservatism of the English. European countries, too, are well behind America, but the ever present demand for economy is having its effect, and the leaders in

European industry are not only seized with the necessity for availing themselves of the assistance of all such managerial aids, but are going very deeply into all efficiency methods. In certain cases it is possible that the economic situation, both in its commercial and political aspects, is the reason for the feverish research in these matters.

The Position in Australia.

Here in Australia the problem is different from other parts of the world. In both Europe and America there is a very pronounced industrial field, with large populations and old established industries. Many of the countries are mainly manufacturing, the primary industries being of lesser importance. On the other hand Australia is really a primary industry continent. There is also an industrial field, but this is limited by the small population and the fact that, with certain exceptions, we are not in a position to manufacture for export. The size of our average factory is therefore very small compared with those of America and Europe, and the solution of problems as applied to those countries may not, and indeed often does not, fit in with our scheme of things here. The methods to be applied in the factory employing 5,000 hands will probably send insolvent the concern with 500 hands on its payroll. Yet even the 500 hand factory is quite a comparatively big unit in Australia. Our factories are small, our enterprises yet in their infancy. What applies to the purely manufacturing industries, applies, perhaps to a lesser degree, to the merchandising and retail sections of trade.

Yet it is of the greatest importance that we keep in touch with modern developments, not only in relation to engineering, manufacturing and merchandising, but also in the spheres of costing and business management. The expedients adopted in other countries must have much to recommend them. It is our duty to discover if these can be moulded to our conditions; can be made to fit in with our scheme of things; can be changed to provide us with the solution of some of our difficulties. The purpose of this chapter, therefore, is to subject Budgeting and Budgetary Control to an examination in an endeavour to evolve a system and conclusions which could be adopted by average concerns in our own country.

The Costing Problem.

It is well recognised that a costing system should tie up with the financial records. This is not an indisputable proof of accuracy but it does limit errors of costs to certain general fields, and also tends to give certainty to the total costs. Unfortunately,

however, costing systems which tie in with the general financial books are usually costly to install, and the word "costly" is written even with a due knowledge of the gains to be expected from such a system. Where any departure is made from a complete costing system, accuracy is bound to suffer and the chances of errors in costs and mistakes in assumptions drawn from the results shown are greatly increased. However, few concerns in Australia can afford to install a complete costing system of a type satisfactory to the expert. Costing in Australia has suffered greatly through the attempted installation of systems which are too big and too cumbersome for the undertaking. It is not denied that the concern would have much to gain, possibly it would be the greatest single aid to profits, but the whole system seems to be so unwieldy and so difficult for both the management and the staff that it is often condemned before the installation is completed.

The Problem of Budgeting in Australia.

The difficulties experienced in relation to costing are likely to be met with in connection with budgeting—in certain cases perhaps to a greater degree. A study of the previous chapters will possibly leave many Australian business executives with one idea in mind—that if it was necessary to go to all that trouble to obtain the necessary information to install variable budgeting, the budget would be completed after the concern had gone into liquidation. The statement that the budget should fit the business and not the business fit the budget applies nowhere with greater force than in Australia. It is therefore necessary to examine the budget to see how this latest development in business management can become available to us in a form that would cater for conditions likely to be experienced here.

The Australian business is often too small to allow the installation of a complete budget system built up under ideal conditions. The size of the average concern is sufficient in itself to make a compromise essential, however important the drawbacks of incomplete measures may be. But it is necessary to understand the principles, and then to mould these principles to fit in with the particular business, having in mind its size, its difficulties and its absorption power. At the same time the mistake should not be made of thinking that anything will do because of the difficulties of installing a complete system.

The Sales Budget.

Suppose we start with the Sales Budget, which is probably more essential here than anywhere else because our market is

limited and we have no export policy in reserve. In Australia unfortunately, statistics have not been developed to a very high pitch, and though the various state statisticians provide us with figures relating to their own particular state, and the Commonwealth figures are available from the Commonwealth Year Book, these sources do not touch much that would be of great value to the average business man. He is largely dependent upon his own records, which, in the vast majority of cases, have no great length of experience behind them. In many cases the business has grown over a comparatively few years, and each year is to a certain extent a venture into the semi-dark. It is true that trends can be traced and estimates made, but these may be very incomplete and limited to totals. Sales figures may never have been analysed, and whilst the figures will enable reasonably accurate predictions of total sales to be made, the additional figures necessary for gauging production programmes, sales of individual products, costs and profits of lines or groups of lines, may be quite unobtainable without undertaking the laborious and costly task of analysing the results of a number of previous years.

Even in the case of total sales, however, there are special difficulties. Whereas in America and, to a lesser degree, England and the Continental countries, forecasting agencies are able to give past figures, thus enabling the trade cycles to be seen and facilitating forecasts of future conditions, little of this nature is available in this country. The fact that it is said that even in America these agencies have only been able to obtain a 50 per cent accuracy does not alter the fact that the information is often of great value. Nor is this the most serious factor.

Australia, mainly a primary producing country, depends largely upon its wheat and wool production for its prosperity. Bountiful wheat and wool production, coupled with good prices, spell success and have a most marked effect upon the vast majority of Australian businesses. On the other hand poor crops, poor prices or both can have, and have had in the past, disastrous results. Furthermore, conditions differ in the various states and a drought and consequent poor harvest in one state may be offset by a bountiful harvest in another. The most important matter to remember, however, is that the prediction of sales, because of this influence of primary industries, becomes largely dependent upon weather conditions, as well as on matters overseas. It is true that estimates can be obtained of the prices likely to be realised for next season's wheat and wool, and even though these are frequently inaccurate, they can be adopted for forecasting purposes. The weather, however, is a

different problem, especially as the late rains can have such a very big effect upon total yields.

These conditions certainly promote difficult problems: Where a concern is trading in all states, the attitude is frequently adopted that a yield failure in one state will be offset by a satisfactory harvest in another, and figures are available to show the yields of the various states over a period of years and the average production per acre. A study of these figures, together with an examination of the conditions so far experienced for the current period, will generally make possible a prediction of what can be expected. Forecasts are issued from time to time and note of these must be taken. In the case of those concerns manufacturing, for example, agricultural machinery, a much closer examination would be necessary. In this case, too, it would be desirable to have some knowledge of the psychology of the farmer.

Sources of Australian Statistics.

By such methods, together with a study of all available statistics relating to the particular problem, it may be possible to arrive at an estimate of what the general conditions are likely to be during the coming period. Dr F. R. E. Mauldon set down the main sources of information concerning statistics as under—

Official.

1. The Commonwealth and State Year Books (Vict. and N.S.W.—and Statistical Bureaux annual summaries or abstracts).
2. Annual Labour Reports.
3. Quarterly summaries of Statistics.
4. Annual Bulletins in Demography (Population and Vital Statistics).
5. Overseas Trade; Production, Finance and Transport and Communication.
6. Monthly summaries of Business Statistics (N.S.W.) and Monthly Business Index of the Queensland Bureau of Industry, together with similar publications of other States.
7. Government departmental documents, such as the Treasury Gazette of Banking Statistics, the Commonwealth Bank Weekly and Monthly Returns, Commonwealth Treasurers' Budget Papers and Reports, Taxation, Postal, Agriculture, Mine and Labour and Industry Departments.

Unofficial.

1. Banking and Insurance Record.
2. Melbourne Stock Exchange Report.
3. Publications of the National Council of Wool Selling Brokers.
4. Private Banks' Monthly Bulletins.
5. Jobson's Investment Digest.

(Taken from "The Use and Abuse of Statistics.")

This is quite a comprehensive list and it is not suggested that all such authorities should be consulted. It is simply necessary to choose those publications which give the statistics of most value in connection with the problem in hand and concentrate attention on them.

It would therefore be necessary to examine the whole matter in the relationship of the business itself and its own particular trade. For example, a radio manufacturing concern would conduct an exhaustive analysis into the past and present radio popularity and the number of wireless licences issued. Any national events likely to influence the popularity of the radio would not be overlooked, e.g., a test cricket match year would be likely to bring an abnormal increase in licences. Furthermore, the plans and intentions of the various Broadcasting Stations, both "A" and "B" class, would have to be taken into account. A decision to erect a new station in an area previously suffering from extremely bad reception would tend to increase the expectation of radio sales in that district. The state of the trade generally, the intentions of competitors or new manufacturers entering the field, newer styles likely to be introduced, the policy of the organisation for the coming period—all these matters would be considered in arriving at the figures to be placed in the Sales Budget.

The Budget Period.

The period of the budget also has to be considered. This may vary in different industries and also for different parts of the year. For example, where an industry is closely connected with agricultural conditions, such as in the case previously mentioned of the agricultural machinery firm, it may be necessary to divide the year into periods, roughly to coincide with, say, the ploughing and harvesting seasons. Alternatively, a three months' period may be adopted. In certain cases the best terms may be two three-monthly periods and one six-monthly. Only the individual circumstances operating in each case can lead to the correct conclusion, but it should be noted that the degree of uncertainty due to primary industries really has the effect

of shortening, rather than lengthening, the budgetary period. Concerns taking out monthly Balance Sheets may be in the fortunate position of being able to arrange a yearly budget divided into monthly parts, but there are comparatively few businesses where the monthly Balance Sheet is as yet the recognised procedure.

Sales Analysis.

When the total sales have been estimated these must be further analysed to divide the figure into, firstly, territories and then possibly into products or groups of products where this has not already been done. The sales total may have been built up through an endeavour to arrive at the sales that can be expected in the individual areas, or each state may have been taken separately, where an interstate trade is carried on. The various branch offices (where these are in operation) may be asked to estimate their own sales, and in turn they may do so by dividing the territory into districts (possibly salesmen's districts) and estimating probable results in relation to each. The factors to be borne in mind would be past results, effects expected from future policies or changes of policies, and the knowledge of each district possessed by the salesmen themselves. Generally, travellers have a most intimate knowledge of affairs in their own districts and are frequently able to give most reliable estimates, not only of probable sales, but of collection of accounts and such matters. It is not infrequently found that in Western Australia, for example, the northern wheat areas may have an excellent season whilst the eastern wheat belt may be faced with extremely poor yields. The purchasing power of these areas during the coming year may therefore be quite different.

In this way quotas can be set, the quotas totalling the budget figure. Each state would then have its own budget figure, the total of these, of course, giving the total for the Head Office. The latter, situated in, say, Melbourne or Sydney, would still have its own state budget as its immediate responsibility.

The Production Budget.

The amount of analysis needed to arrive at product sales depends upon the type of business. In the case of manufacturing, a production programme can only be built up from the quantities of products demanded by the sales budget. This is comparatively simple when the number of manufactured lines is few. For example, in the case of machinery, it is probable that the total sales have been estimated by predicting the number of each particular type of machine likely to be required, and from

this it should be possible to draw up the manufacturing programme. Great care must be taken in those cases where it is necessary to have the manufacturing programme largely completed before the advent of the selling season. Where, however, manufacturing is carried out over the year, it is possible to speed up or slacken production where it is found necessary to vary the budgeted manufacturing programme.

Where large numbers of products are being manufactured no hard and fast rule can be laid down, but it is probable that the analysis necessary to determine the amount of each product likely to be required will demand a great deal of work. Even when these figures have been finally obtained they may be merely unreliable estimates quite unsuitable for use as the basis of a manufacturing programme. This promotes something of a dilemma because it is necessary to have a manufacturing programme and a manufacturing budget and these must be in harmony with the sales budget. Here it may be necessary to depart somewhat further from the general principles laid down heretofore. Where it is obviously impossible to make any complete and exhaustive analysis of products, it may be feasible to arrive at the quantities of the various products manufactured in previous years or periods. Investigation of these figures, which would probably be obtained from works authorisations or production orders, examined in the light of total sales, may make it possible to discover a fixed relationship between products or groups of products and total sales. This may then be followed by prediction of the total of the products or groups of products likely to be required in relation to the total of the budgeted sales for the period under review. Very often this will provide estimates of sufficient accuracy to enable the sales to be split up into desired groups.

Where this yields a tangible solution, the manufacturing programme may be set in the light of previous programmes. Thus it would be known that in the previous year a commencement was made with the manufacture of certain products in certain quantities, and that these quantities had to be repeated in two months. If the current period allows for an increase in sales of 10 per cent, it may be advisable to increase the manufacturing programme 10 per cent all round, or, alternatively, increase by a larger amount those products which are likely to be responsible for the increase in the total sales figure. It is surprising the results which can be achieved by careful analysis and investigation from apparently barren soil. All planning, however, must be done intelligently and the mistakes and drawbacks of previous periods should be avoided. It is also necessary to take into account slow stocks, accumulated because of over-

production in previous periods. The economic lot quantity would here enter into the question. This problem is similar in Australia to elsewhere, except that here the economic lot would generally be much smaller than in most other countries. It thus becomes possible to arrive at the quantities of each product that would go to make up a complete manufacturing programme. It is probable that the first attempts may not be very successful, but with experience and practice a great deal of accuracy would soon be obtained. Right from the outset, however, increased efficiency and a certain amount of economy would probably result.

The Materials Budget.

Once a manufacturing programme has been adopted (and it must be remembered that where difficulties are great a monthly period can quite well be used) materials control should be attempted. A thorough survey of the stock sheets would show the amount and kinds of dead and obsolete stock, and this in itself would produce valuable information. It may come as a surprise to realise how much stock of this nature has been accumulated. The large stocks of slow sellers that can result from haphazard manufacturing and unwise manufacturing programmes will be illuminating and the necessity for predetermined and carefully thought out plans will be illustrated. The result of this investigation may mean an alteration in the manufacturing programme, but in any case, once the production programme is fixed, the preparation of materials necessary should present no difficulties.

The Purchase Budget.

From this investigation of the stocks and manufacturing programme it is necessary to proceed to the purchasing of the requirements for manufacturing. It will be remembered that it was pointed out in Chapter IV that much money can be saved by keeping inventories at a minimum and this applies with equal force in Australia as elsewhere. By a series of simple charts and tables it is possible to work out a purchasing programme as the commencing point of a purchase budget. At first this will often be merely a placing on paper the plans adopted in the past. The procedure to be adopted will resemble that outlined previously in this connection, and quantities to be purchased will be calculated from the Materials Budget.

Expense Budgets.

The budgeting for and control of expense may raise more difficult questions especially where in the past there has been only limited knowledge of costs. It will be remembered that the

procedure adopted when dealing with the principles governing the expense budgets commenced with a study of past costs and then a setting of standards to obtain total expenses. It is possible, and indeed is the case in many Australian businesses, that any knowledge of costs is somewhat superficial and would certainly be more guess-work than reliable estimates. It is evident that such figures are of little use for incorporating in a budget. As it is necessary to calculate the expenses so that the estimated profit or loss on the transactions can be ultimately obtained, there are several plans which can be adopted.

It may be possible to arrive at standard costs for each product or set of products. This entails a detailed examination of the operations in relation to each product or group of products under either a set of ideal conditions, a set of normal conditions, or a set of conditions such as is likely to represent the standard which the factory will achieve. Where no statistics of these costs are already available it would be necessary to go through each operation with foremen, estimating the time taken, the batches to be processed and the factory expenses which would be incurred. Indirect expenses could then be arrived at either as estimates in relation to the products or as a total for the whole of the factory operations. Such matters as rent, depreciation, lighting etc. could be gauged with accuracy from previous accounts, and it is really the direct factory expenses which would cause most difficulty.

An examination of past records would show the totals of the expenses in relation to the manufacturing programme last year, or last month, or whatever period was examined. If for the period covered by the budget the manufacturing programme is to be speeded up by 10 per cent, estimates of the total expense necessary could be made. Under these circumstances care must be taken to ensure that the estimated figures are at least equal to the previous results. For example, if the past year's results were satisfactory and it was felt that a high standard of efficiency had been attained in the factory operations, it may be considered advisable to budget for only a slight improvement on the past period's results, making allowance, of course, for any differences in the manufacturing programme. Where the results were not satisfactory, determined efforts should be made towards improvement, and the budget figure should be set accordingly. This method has, of course, obvious weaknesses, but these can be largely eliminated over a period, as more accurate knowledge becomes available. The important matter is to see that these improvements are made as quickly as possible and in sufficient time to make sure that the business does not suffer unduly in the intervening period. It is worthy of note that

the time taken to reach satisfactory stages with the budget often varies proportionately to the time and thought put into the matter.

Where the budget figures are estimates which could not be based on any very reliable past figures, a greater degree of surveillance and examination should be practised. Furthermore, it will probably be found advisable to make the budgetary period a fairly short one. With successive periods estimates which were largely guesses can quickly be dispensed with, figures based upon actual experience being substituted.

Dealing with departmental expense figures represents an attempt to evade the necessity for making individual product costs. It treats the factory as a whole or as being merely split up into a number of departments giving departmental costs. This method will enable control in total to be exercised with more or less success, but sometimes seriously handicaps the management when it comes to a detailed analysis of actual operations.

Selling Expense Budget.

It should not be difficult to arrive at the total of selling expenses from past financial records, particularly in Australia where, as a rule, the number of salesmen employed is small, and few selling methods are complicated.

Advertising Budget.

The question of advertising presents few difficulties. It is probable that there has always been an advertising appropriation at least when much advertising has been done. This appropriation can be continued and an attempt made to split it into various product advertising costs, or, where necessary, costs for groups of products, and also in relation to various advertising media.

The Cash Budget.

Before proceeding to the next logical step of the estimated Balance Sheet, it may be wise to examine the question of the Cash Budget. This can and should be prepared in accordance with the methods outlined when dealing with this subject. The depression restricted the practice, previously widespread throughout Australia, of granting credit on "after-harvest" terms. In certain industries it is still done, of course, but to a limited extent only. Possibly more now than ever before, the cash position must be controlled and the controlling device is the cash budget. It is not proposed to go into this matter in detail because entirely conventional lines are followed. Where country business is being done, however, it may be necessary

to alter estimates according to seasonal conditions and produce prices. Salesmen and country travellers can be invaluable in giving the finance department information regarding country customers. The standing of every one is well known throughout the commercial travelling community, and note is always being taken and comparisons made in relation to district crops and district prospects, both for collections and sales.

Estimated Profit & Loss A/c.

When the whole of the budget figures have been obtained, it will be possible to prepare the estimated profit and loss account and balance sheet and arrive at the estimated results disclosed thereby. The result shown may or may not be satisfactory, but where the estimates are not based on anything very solid in the way of accurate costings etc., it is advisable to spend a good deal of time in a thorough examination and analysis of the position presented by these statements. In the first place a comparison should be made between the results for the period as against those shown for the previous period. Any discrepancy should be traced, and it may then be found that the budgeted results will disclose a very much more favourable result than that of the previous period. This should be viewed with the greatest suspicion until the reasons for the change become apparent. It is useless to arrive at satisfactory estimates unless they represent sane expectations rather than pious hopes.

It was pointed out that where unsatisfactory results have been shown every endeavour should be made to improve upon these performances, and it is possible that the new figures are the results of the alterations which are proposed. If analysis shows this to be the position, it will be necessary to go into this phase of the question again, making sure that the new conditions are essentially practicable and can be realised, or at least are possible of achievement. Throughout the period special attention and supervision should then be given to this particular matter. This is, therefore, the first consideration—to compare the estimated balance sheet with the previous period's results. The manner in which any alterations in the budget which distinguish this period from the previous period, are likely to affect results, should then be noted. This aspect of analysing the results to see that the budget is setting forth something practical, something that there is every chance of attaining, cannot be too strongly stressed. It is all important that the results budgeted be reliable estimates, not a mere juggling of figures to give a desired result.

Even though the figures shown may be favourable, further improvement may be possible after re-examining the various

factors and ensuring that everything is in harmony. The production programme must fit in with the sales programme, the inventories must be kept in line, the machines must be able to cope with the manufacturing programme.

It is possible, however, that the results disclosed by the estimated Profit and Loss Account and Balance Sheet will be unfavourable. Here again, it is impossible to cure the disease until it has been diagnosed. The unfavourable factors must be isolated to discover what is mainly responsible for the adverse results. Comparisons with the previous period will yield some information. Alternatively, the budget may show some improvement on past results, but this may not be very pronounced, and certainly not sufficient to enable a profit to be shown. The first step would be to try and locate the stumbling blocks—selling expenses which are too high, factory operations which are too costly, profits made in the factory which are eaten up in heavy overhead, machines which are inefficient. Each function should be taken separately, analysed, and an attempt made to improve upon the results. Every possible efficiency, every saving consistent with good management, should be pursued. Perhaps routing the work differently in the factory would overcome delays which are really at the bottom of heavy factory costs. Possibly selling expenses are too high, because of uneconomic travelling. Expenses for travelling and entertaining may be extravagant and not warranted by results. Repair bills may be exorbitant or perhaps raw materials are not bought economically. An efficiency audit should be conducted to arrive at the root of the trouble. Even if difficulties cannot possibly be altered—if financial resources will not allow them to be altered—they should be known. They cannot be repaired or circumvented until they are known and at least it may be possible to advance workable plans for a more satisfactory state of affairs.

Control.

Once the budget has been decided upon and passed as being the gauge set for the coming period, the next problem is that of control. This is in one way simplified, and in another made more difficult, by the fact that totals and sub-totals only are available as means of control. In the first place, it is comparatively easy to see whether the actual results accord with the budgetary figures, but it is much more difficult to judge where the budget breaks down when the estimates are not realised. It was mentioned earlier that the more general the figures the more difficult the localisation of faults. Possibly much analysis will be necessary to locate discrepancies, to fix the responsibility, and to rectify the mistakes. Yet this is the crux of budgetary

control and must be done. The value of the budget is very limited if it is merely regarded as a set of figures. The action necessary to overcome errors cannot be detailed here because each case must be treated on its merits. Nevertheless, correctives will probably follow quickly upon analyses of cause and result.

Practical Application in Australia.

The attempt has been made in the foregoing pages to set down, firstly the main principles of budgeting, secondly the application of those principles in the preparation of the budget, and thirdly the application of budgetary control.

For the average Australian manufacturing business—of medium size—with some knowledge of costs obtained by observation and calculation, but without any recognised costing system, a complete fixed budget system could be attempted. It should be taken step by step and proceeded through to logical conclusion. Where individual items cannot be obtained with any degree of accuracy, totals can be inserted having in mind the necessity for working back to details as soon as possible in subsequent budget periods.

The use of a complete form of variable budgeting will be found to be difficult unless accurate data obtained through a costing system is available, whilst a system of standard costs is always of the greatest value. The complete Flexible Budget based upon a costing system—the sixth method described—is definitely the best method of budgeting for a manufacturing business. Where this is impossible, however, one of the other methods of variable budgeting outlined in Part 2 of this book may be adopted. Sometimes some such method can be used in conjunction with a Fixed Budget. Indeed where the latter is in operation it is always advisable to aim at the incorporation of variable budgeting formulas in order to arrive at correct figures of turnovers other than those appearing in the Fixed Budget. It is suggested, therefore, that as a general rule the most advisable forms of budgeting, in order, are—

1. A Flexible Budget based on a Costing System.
2. A Flexible Budget based on estimated costs, though without an actual Costing System.
3. Some form of budget which would be a compromise between the Fixed and the Flexible Budgets.
4. A Fixed Budget.

Though there are three preferable alternatives, even the value of Fixed Budgets should not be underestimated. They can be most useful management aids and with a little experience can be used as stepping-off points for the installation of a Flexible Budget.

Particularly in relation to the smaller Australian manufacturing business it will often be thought that the peculiarities of such make budgeting too difficult, generally because of the impossibility of predicting sales or some such essential matter. It should be remembered that every business is apt to think along these lines and there are always some difficulties encountered, but such problems seldom fail to yield to a determined effort. If it is maintained that the difficulties cannot possibly be overcome there may be other means of minimising the trouble.

In the first place, a commencement can be made with one or more small budgets. For example, a beginning can be made with a Cash Budget. Later, possibly in successive periods, a Sales Budget could be developed—then an Expense Budget, and so on. Alternatively, a start might be made by budgeting office costs. This may gradually be extended to take in selling costs and other expenses. An advertising appropriation may follow, and so on until all administrative and selling costs have been covered. It may then be thought fit to devote attention to certain portions of the manufacturing programme, until finally every phase of the business is budget controlled.

There need be no hesitation about making a small and simple start, gradually extending period by period to take in successive phases of the business. The repeated preparation of estimates will make for proficiency and ability in dealing with the more difficult sections of a business. It should also be remembered that where a budget, even covering only a portion of the activities, is prepared conscientiously, some benefit will undoubtedly be felt. Difficulties will no doubt occur, but few things worth while are obtained easily.

There is another method by which some simplification of problems is possible. Where it may be thought altogether too difficult to prepare budgetary estimates covering, say, six months, these may be possible for, say, one, two or three months. For example, if it is practically impossible to forecast sales for six months ahead, but a reasonably accurate figure for the next month could be predicted, a total for six months could be inserted, but concentration devoted to the first month's results.

It will be noted that the foregoing deals mainly with manufacturing activities. The question of the wholesale and/or retail merchant raises problems of a different kind, though these are largely dealt with in the chapter dealing with this subject. The difference between Australian and overseas conditions in these matters is not nearly as marked as in the case of manufacturing industries. However, even here Australian conditions make it necessary to cater for and copê with certain peculiarities. With

some modifications where necessary it should not be difficult to adopt the methods outlined in Chapter VII.

That some form of this management device should be adopted should not need proving. In this era of ever increasing efficiency, it is necessary that we in Australia, as elsewhere, should become more and more able to depend upon our own efficiency, rather than upon such factors as favourable duties and exchange rates, which may be mere temporary palliatives. A system of budgetary control will definitely help towards the desired standard of efficiency. The universal recognition of its uses and its effectiveness overseas should be sufficient proof of its value. Once a commencement is made, providing that intelligent operation gives it a reasonable chance, budgetary control may speedily become indispensable.

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(References are to pages.)

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